

July 19, 2021

Report to:

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Project ID:

ACZ Project ID: L66693

Holly Beggy:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 23, 2021. This project has been assigned to ACZ's project number, L66693. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L66693. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 18, 2021. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and
approved this report.



Hudbay Minerals

Project ID:

Sample ID: SR-1

ACZ Sample ID: **L66693-01**

Date Sampled: 06/17/21 05:40

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/14/21 11:21	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/14/21 8:45	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.651		*	mg/L	0.05	0.25	07/15/21 22:59	jlw
Aluminum, total (3050)	M6010D ICP	100	2760		*	mg/Kg	5	25	07/14/21 0:01	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/15/21 15:33	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 20:38	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00075	B	*	mg/L	0.0002	0.001	07/15/21 15:33	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	1.11		*	mg/Kg	0.1	0.5	07/13/21 20:38	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/15/21 15:33	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.116	B		mg/Kg	0.025	0.125	07/13/21 20:38	bsu
Calcium (1312)	M6010D ICP	1	5.91			mg/L	0.1	0.5	07/15/21 11:40	jlw
Calcium, total (3050)	M6010D ICP	100	2060			mg/Kg	10	50	07/14/21 0:01	jlw
Copper (1312)	M6020B ICP-MS	1	0.0103			mg/L	0.0008	0.002	07/15/21 15:33	bsu
Copper, total (3050)	M6020B ICP-MS	500	32.2		*	mg/Kg	0.4	1	07/13/21 20:38	bsu
Iron (1312)	M6010D ICP	1	0.299		*	mg/L	0.06	0.15	07/15/21 11:40	jlw
Iron, total (3050)	M6010D ICP	100	4710		*	mg/Kg	6	15	07/14/21 0:01	jlw
Lead (1312)	M6020B ICP-MS	1	0.00035	B	*	mg/L	0.0001	0.0005	07/15/21 15:33	bsu
Lead, total (3050)	M6020B ICP-MS	500	3.63		*	mg/Kg	0.05	0.25	07/13/21 20:38	bsu
Magnesium (1312)	M6010D ICP	1	0.30	B	*	mg/L	0.2	1	07/15/21 11:40	jlw
Magnesium, total (3050)	M6010D ICP	100	655			mg/Kg	20	100	07/14/21 0:01	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/15/21 11:40	jlw
Manganese, total (3050)	M6010D ICP	100	162		*	mg/Kg	1	5	07/14/21 0:01	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 14:35	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	<2.53	U	*	ng/g	2.53	12.65	07/06/21 12:31	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/15/21 11:40	jlw
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 0:01	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00043	B	*	mg/L	0.0004	0.001	07/15/21 15:33	bsu
Nickel, total (3050)	M6020B ICP-MS	500	1.77			mg/Kg	0.2	0.5	07/13/21 20:38	bsu
Selenium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.00025	07/15/21 15:33	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.0882	B	*	mg/Kg	0.05	0.125	07/13/21 20:38	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/15/21 15:33	bsu
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 20:38	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/15/21 11:40	jlw
Zinc, total (3050)	M6010D ICP	100	10.8			mg/Kg	2	5	07/14/21 0:01	jlw

Hudbay Minerals

Project ID:

Sample ID: SR-1

ACZ Sample ID: **L66693-01**

Date Sampled: 06/17/21 05:40

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.2	B	*	%	0.1	0.5	07/06/21 8:55	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	<0.1	U	*	%	0.1	0.5	07/06/21 8:55	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.2	B	*	%	0.1	0.5	07/06/21 8:55	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.152		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.7		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.9		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/25/21 12:43	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 8:38	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 15:30	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 9:45	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 9:45	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:03	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 8:00	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 8:00	jpb
Synthetic Precip. Leaching Procedure	M1312								07/12/21 12:00	gkh/zln

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: SR-2

ACZ Sample ID: **L66693-02**

Date Sampled: 06/17/21 06:56

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/14/21 12:16	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/14/21 8:45	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.513		*	mg/L	0.05	0.25	07/15/21 23:10	jlw
Aluminum, total (3050)	M6010D ICP	100	5890		*	mg/Kg	5	25	07/14/21 0:11	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/15/21 15:35	bsu
Antimony, total (3050)	M6020B ICP-MS	500	0.476	B	*	mg/Kg	0.2	1	07/13/21 20:40	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00159		*	mg/L	0.0002	0.001	07/15/21 15:35	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	7.50		*	mg/Kg	0.1	0.5	07/13/21 20:40	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/15/21 15:35	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.144			mg/Kg	0.025	0.125	07/13/21 20:40	bsu
Calcium (1312)	M6010D ICP	1	8.67			mg/L	0.1	0.5	07/15/21 11:51	jlw
Calcium, total (3050)	M6010D ICP	100	18900			mg/Kg	10	50	07/14/21 0:11	jlw
Copper (1312)	M6020B ICP-MS	1	0.00602			mg/L	0.0008	0.002	07/15/21 15:35	bsu
Copper, total (3050)	M6020B ICP-MS	500	18.5		*	mg/Kg	0.4	1	07/13/21 20:40	bsu
Iron (1312)	M6010D ICP	1	0.229		*	mg/L	0.06	0.15	07/15/21 11:51	jlw
Iron, total (3050)	M6010D ICP	100	9750		*	mg/Kg	6	15	07/14/21 0:11	jlw
Lead (1312)	M6020B ICP-MS	1	0.00037	B	*	mg/L	0.0001	0.0005	07/15/21 15:35	bsu
Lead, total (3050)	M6020B ICP-MS	500	5.84		*	mg/Kg	0.05	0.25	07/13/21 20:40	bsu
Magnesium (1312)	M6010D ICP	1	0.37	B	*	mg/L	0.2	1	07/15/21 11:51	jlw
Magnesium, total (3050)	M6010D ICP	100	2600			mg/Kg	20	100	07/14/21 0:11	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/15/21 11:51	jlw
Manganese, total (3050)	M6010D ICP	100	181		*	mg/Kg	1	5	07/14/21 0:11	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 14:38	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	3.97	B	*	ng/g	2.54	12.7	07/06/21 12:48	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/15/21 11:51	jlw
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 0:11	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00047	B	*	mg/L	0.0004	0.001	07/15/21 15:35	bsu
Nickel, total (3050)	M6020B ICP-MS	500	3.74			mg/Kg	0.2	0.5	07/13/21 20:40	bsu
Selenium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.00025	07/15/21 15:35	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.105	B	*	mg/Kg	0.05	0.125	07/13/21 20:40	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/15/21 15:35	bsu
Thallium, total (3050)	M6020B ICP-MS	500	0.0803	B		mg/Kg	0.05	0.25	07/13/21 20:40	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/15/21 11:51	jlw
Zinc, total (3050)	M6010D ICP	100	25.6			mg/Kg	2	5	07/14/21 0:11	jlw

Hudbay Minerals

Project ID:

Sample ID: SR-2

ACZ Sample ID: **L66693-02**

Date Sampled: 06/17/21 06:56

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.8		*	%	0.1	0.5	07/06/21 9:21	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	1.3		*	%	0.1	0.5	07/06/21 9:21	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.5		*	%	0.1	0.5	07/06/21 9:21	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.240		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.6		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.9		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.7		*	%	0.1	0.5	06/25/21 15:09	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 8:50	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 15:35	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 10:31	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 10:31	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:09	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 8:06	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 8:06	jpb
Synthetic Precip. Leaching Procedure	M1312								07/12/21 14:42	gkh/zln

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: SR-3

ACZ Sample ID: **L66693-03**

Date Sampled: 06/17/21 05:40

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/14/21 12:34	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/14/21 8:45	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.652		*	mg/L	0.05	0.25	07/15/21 23:14	jlw
Aluminum, total (3050)	M6010D ICP	100	2480		*	mg/Kg	5	25	07/14/21 0:15	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/15/21 15:40	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 20:42	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00072	B	*	mg/L	0.0002	0.001	07/15/21 15:40	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	0.934		*	mg/Kg	0.1	0.5	07/13/21 20:42	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/15/21 15:40	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.101	B		mg/Kg	0.025	0.125	07/13/21 20:42	bsu
Calcium (1312)	M6010D ICP	1	5.89			mg/L	0.1	0.5	07/15/21 11:55	jlw
Calcium, total (3050)	M6010D ICP	100	2070			mg/Kg	10	50	07/14/21 0:15	jlw
Copper (1312)	M6020B ICP-MS	1	0.0115			mg/L	0.0008	0.002	07/15/21 15:40	bsu
Copper, total (3050)	M6020B ICP-MS	500	27.8		*	mg/Kg	0.4	1	07/13/21 20:42	bsu
Iron (1312)	M6010D ICP	1	0.301		*	mg/L	0.06	0.15	07/15/21 11:55	jlw
Iron, total (3050)	M6010D ICP	100	4380		*	mg/Kg	6	15	07/14/21 0:15	jlw
Lead (1312)	M6020B ICP-MS	1	0.00042	B	*	mg/L	0.0001	0.0005	07/15/21 15:40	bsu
Lead, total (3050)	M6020B ICP-MS	500	3.19		*	mg/Kg	0.05	0.25	07/13/21 20:42	bsu
Magnesium (1312)	M6010D ICP	1	0.28	B	*	mg/L	0.2	1	07/15/21 11:55	jlw
Magnesium, total (3050)	M6010D ICP	100	596			mg/Kg	20	100	07/14/21 0:15	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/15/21 11:55	jlw
Manganese, total (3050)	M6010D ICP	100	117		*	mg/Kg	1	5	07/14/21 0:15	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 14:39	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	<2.33	U	*	ng/g	2.33	11.65	07/06/21 13:12	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/15/21 11:55	jlw
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 0:15	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00041	B	*	mg/L	0.0004	0.001	07/15/21 15:40	bsu
Nickel, total (3050)	M6020B ICP-MS	500	1.51			mg/Kg	0.2	0.5	07/13/21 20:42	bsu
Selenium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.00025	07/15/21 15:40	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.0792	B	*	mg/Kg	0.05	0.125	07/13/21 20:42	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/15/21 15:40	bsu
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 20:42	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/15/21 11:55	jlw
Zinc, total (3050)	M6010D ICP	100	9.44			mg/Kg	2	5	07/14/21 0:15	jlw

Hudbay Minerals

Project ID:

Sample ID: SR-3

ACZ Sample ID: **L66693-03**

Date Sampled: 06/17/21 05:40

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.2	B	*	%	0.1	0.5	07/06/21 9:34	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	<0.1	U	*	%	0.1	0.5	07/06/21 9:34	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.2	B	*	%	0.1	0.5	07/06/21 9:34	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.146		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.5		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	8.0		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/25/21 16:22	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 8:54	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 15:40	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 10:46	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 10:46	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:12	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 8:13	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 8:13	jpb
Synthetic Precip. Leaching Procedure	M1312								07/12/21 17:24	gkh/zln

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: WR-1

ACZ Sample ID: **L66693-04**

Date Sampled: 06/14/21 12:13

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/12/21 12:02	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/10/21 13:15	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.546			mg/L	0.05	0.25	07/13/21 22:07	kja
Aluminum, total (3050)	M6010D ICP	100	4900		*	mg/Kg	5	25	07/14/21 0:19	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/13/21 15:13	bsu
Antimony, total (3050)	M6020B ICP-MS	500	0.271	B	*	mg/Kg	0.2	1	07/13/21 20:44	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00150		*	mg/L	0.0002	0.001	07/13/21 15:13	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	4.99		*	mg/Kg	0.1	0.5	07/13/21 20:44	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/13/21 15:13	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.201			mg/Kg	0.025	0.125	07/13/21 20:44	bsu
Calcium (1312)	M6010D ICP	1	8.57			mg/L	0.1	0.5	07/13/21 22:07	kja
Calcium, total (3050)	M6010D ICP	100	36400			mg/Kg	10	50	07/14/21 0:19	jlw
Copper (1312)	M6020B ICP-MS	1	0.00511		*	mg/L	0.0008	0.002	07/13/21 15:13	bsu
Copper, total (3050)	M6020B ICP-MS	500	23.2		*	mg/Kg	0.4	1	07/13/21 20:44	bsu
Iron (1312)	M6010D ICP	1	0.175		*	mg/L	0.06	0.15	07/13/21 22:07	kja
Iron, total (3050)	M6010D ICP	100	8580		*	mg/Kg	6	15	07/14/21 0:19	jlw
Lead (1312)	M6020B ICP-MS	1	0.00027	B	*	mg/L	0.0001	0.0005	07/13/21 15:13	bsu
Lead, total (3050)	M6020B ICP-MS	500	6.15		*	mg/Kg	0.05	0.25	07/13/21 20:44	bsu
Magnesium (1312)	M6010D ICP	1	0.44	B	*	mg/L	0.2	1	07/13/21 22:07	kja
Magnesium, total (3050)	M6010D ICP	100	2470			mg/Kg	20	100	07/14/21 0:19	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/13/21 22:07	kja
Manganese, total (3050)	M6010D ICP	100	163		*	mg/Kg	1	5	07/14/21 0:19	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 14:15	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	<2.6	U	*	ng/g	2.6	13	07/06/21 13:21	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/13/21 22:07	kja
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 0:19	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/13/21 15:13	bsu
Nickel, total (3050)	M6020B ICP-MS	500	3.46			mg/Kg	0.2	0.5	07/13/21 20:44	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00011	B	*	mg/L	0.0001	0.00025	07/13/21 15:13	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.0749	B	*	mg/Kg	0.05	0.125	07/13/21 20:44	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/13/21 15:13	bsu
Thallium, total (3050)	M6020B ICP-MS	500	0.0633	B		mg/Kg	0.05	0.25	07/13/21 20:44	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/13/21 22:07	kja
Zinc, total (3050)	M6010D ICP	100	21.4			mg/Kg	2	5	07/14/21 0:19	jlw

Hudbay Minerals

Project ID:

Sample ID: WR-1

ACZ Sample ID: **L66693-04**

Date Sampled: 06/14/21 12:13

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.9		*	%	0.1	0.5	07/06/21 9:47	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.7		*	%	0.1	0.5	07/06/21 9:47	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.2	B	*	%	0.1	0.5	07/06/21 9:47	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.201		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.2		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	8.2		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.8		*	%	0.1	0.5	06/25/21 17:35	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 8:58	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 15:45	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 11:02	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 11:02	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:15	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 8:20	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 8:20	jpb
Synthetic Precip. Leaching Procedure	M1312								07/08/21 20:45	zln

Arizona license number: **AZ0102**

Hudbay Minerals

Project ID:

Sample ID: WR-2

ACZ Sample ID: **L66693-05**

Date Sampled: 06/14/21 12:43

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/12/21 13:00	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/10/21 13:15	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.307			mg/L	0.05	0.25	07/13/21 22:15	kja
Aluminum, total (3050)	M6010D ICP	100	3250		*	mg/Kg	5	25	07/14/21 0:34	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/13/21 15:16	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 20:49	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00112		*	mg/L	0.0002	0.001	07/13/21 15:16	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	2.55		*	mg/Kg	0.1	0.5	07/13/21 20:49	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/13/21 15:16	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.159			mg/Kg	0.025	0.125	07/13/21 20:49	bsu
Calcium (1312)	M6010D ICP	1	10.1			mg/L	0.1	0.5	07/13/21 22:15	kja
Calcium, total (3050)	M6010D ICP	200	81100			mg/Kg	20	100	07/14/21 13:12	kja
Copper (1312)	M6020B ICP-MS	1	0.0116		*	mg/L	0.0008	0.002	07/13/21 15:16	bsu
Copper, total (3050)	M6020B ICP-MS	500	41.3		*	mg/Kg	0.4	1	07/13/21 20:49	bsu
Iron (1312)	M6010D ICP	1	0.071	B	*	mg/L	0.06	0.15	07/13/21 22:15	kja
Iron, total (3050)	M6010D ICP	200	5860		*	mg/Kg	12	30	07/14/21 13:12	kja
Lead (1312)	M6020B ICP-MS	1	0.00039	B	*	mg/L	0.0001	0.0005	07/13/21 15:16	bsu
Lead, total (3050)	M6020B ICP-MS	500	5.91		*	mg/Kg	0.05	0.25	07/13/21 20:49	bsu
Magnesium (1312)	M6010D ICP	1	0.39	B	*	mg/L	0.2	1	07/13/21 22:15	kja
Magnesium, total (3050)	M6010D ICP	100	2310			mg/Kg	20	100	07/14/21 0:34	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/13/21 22:15	kja
Manganese, total (3050)	M6010D ICP	100	150		*	mg/Kg	1	5	07/14/21 0:34	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 14:17	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	3.01	B	*	ng/g	2.36	11.8	07/06/21 13:30	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/13/21 22:15	kja
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 0:34	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00040	B	*	mg/L	0.0004	0.001	07/13/21 15:16	bsu
Nickel, total (3050)	M6020B ICP-MS	500	2.60			mg/Kg	0.2	0.5	07/13/21 20:49	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00012	B	*	mg/L	0.0001	0.00025	07/13/21 15:16	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.123	B	*	mg/Kg	0.05	0.125	07/13/21 20:49	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/13/21 15:16	bsu
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 20:49	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/13/21 22:15	kja
Zinc, total (3050)	M6010D ICP	100	17.8			mg/Kg	2	5	07/14/21 0:34	jlw

Hudbay Minerals

Project ID:

Sample ID: WR-2

ACZ Sample ID: **L66693-05**

Date Sampled: 06/14/21 12:43

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	4.9		*	%	0.1	0.5	07/06/21 9:59	jpj
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	4.5		*	%	0.1	0.5	07/06/21 9:59	jpj
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.4	B	*	%	0.1	0.5	07/06/21 9:59	jpj
Conductivity @25C	SM2510B									
Conductivity		1	0.307		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	23.0		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	8.0		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/25/21 18:48	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 9:02	jpj

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 15:50	jpj
Digestion - Hot Plate	M3050B ICP								07/12/21 11:17	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 11:17	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:18	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 8:26	jpj
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 8:26	jpj
Synthetic Precip. Leaching Procedure	M1312								07/08/21 23:06	zln

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: D2-9

ACZ Sample ID: **L66693-06**

Date Sampled: 06/10/21 06:14

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/12/21 14:48	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/10/21 13:15	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.948		*	mg/L	0.05	0.25	07/13/21 12:15	jlw
Aluminum, total (3050)	M6010D ICP	101	3520		*	mg/Kg	5.05	25.3	07/14/21 0:38	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 20:35	bsu
Antimony, total (3050)	M6020B ICP-MS	505	<0.202	U	*	mg/Kg	0.202	1.01	07/13/21 20:53	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00054	B	*	mg/L	0.0002	0.001	07/12/21 20:35	bsu
Arsenic, total (3050)	M6020B ICP-MS	505	0.890		*	mg/Kg	0.101	0.505	07/13/21 20:53	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 20:35	bsu
Cadmium, total (3050)	M6020B ICP-MS	505	0.0902	B		mg/Kg	0.0253	0.126	07/13/21 20:53	bsu
Calcium (1312)	M6010D ICP	1	2.99			mg/L	0.1	0.5	07/13/21 12:15	jlw
Calcium, total (3050)	M6010D ICP	101	1810			mg/Kg	10.1	50.5	07/14/21 13:16	kja
Copper (1312)	M6020B ICP-MS	1	0.00808		*	mg/L	0.0008	0.002	07/12/21 20:35	bsu
Copper, total (3050)	M6020B ICP-MS	505	40.5		*	mg/Kg	0.404	1.01	07/13/21 20:53	bsu
Iron (1312)	M6010D ICP	1	0.647		*	mg/L	0.06	0.15	07/13/21 12:15	jlw
Iron, total (3050)	M6010D ICP	101	9360		*	mg/Kg	6.06	15.2	07/14/21 13:16	kja
Lead (1312)	M6020B ICP-MS	1	0.00089		*	mg/L	0.0001	0.0005	07/12/21 20:35	bsu
Lead, total (3050)	M6020B ICP-MS	505	4.32		*	mg/Kg	0.0505	0.253	07/13/21 20:53	bsu
Magnesium (1312)	M6010D ICP	1	0.38	B	*	mg/L	0.2	1	07/13/21 12:15	jlw
Magnesium, total (3050)	M6010D ICP	101	1070			mg/Kg	20.2	101	07/14/21 0:38	jlw
Manganese (1312)	M6010D ICP	1	0.015	B	*	mg/L	0.01	0.05	07/13/21 12:15	jlw
Manganese, total (3050)	M6010D ICP	101	123		*	mg/Kg	1.01	5.05	07/14/21 0:38	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:25	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	5.75	B	*	ng/g	2.43	12.15	07/06/21 13:56	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/13/21 12:15	jlw
Molybdenum, total (3050)	M6010D ICP	101	<2.02	U		mg/Kg	2.02	10.1	07/14/21 0:38	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00049	B	*	mg/L	0.0004	0.001	07/12/21 20:35	bsu
Nickel, total (3050)	M6020B ICP-MS	505	2.58			mg/Kg	0.202	0.505	07/13/21 20:53	bsu
Selenium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.00025	07/12/21 20:35	bsu
Selenium, total (3050)	M6020B ICP-MS	505	0.118	B	*	mg/Kg	0.0505	0.126	07/13/21 20:53	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 20:35	bsu
Thallium, total (3050)	M6020B ICP-MS	505	0.0635	B		mg/Kg	0.0505	0.253	07/13/21 20:53	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/13/21 12:15	jlw
Zinc, total (3050)	M6010D ICP	101	15.4			mg/Kg	2.02	5.05	07/14/21 0:38	jlw

Hudbay Minerals

Project ID:

Sample ID: D2-9

ACZ Sample ID: **L66693-06**

Date Sampled: 06/10/21 06:14

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.4		*	%	0.1	0.5	07/06/21 10:12	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	<0.1	U	*	%	0.1	0.5	07/06/21 10:12	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.5		*	%	0.1	0.5	07/06/21 10:12	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.567		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.8		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.0		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.7		*	%	0.1	0.5	06/25/21 20:01	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.01	B	*	%	0.01	0.1	07/06/21 9:06	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 15:55	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 11:32	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 11:32	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:21	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 8:33	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 8:33	jpb
Synthetic Precip. Leaching Procedure	M1312								07/08/21 1:24	zln/gkh

Arizona license number: **AZ0102**

Hudbay Minerals

Project ID:

Sample ID: D2-13

ACZ Sample ID: **L66693-07**

Date Sampled: 06/10/21 07:02

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/12/21 15:08	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/10/21 13:15	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.792		*	mg/L	0.05	0.25	07/13/21 12:23	jlw
Aluminum, total (3050)	M6010D ICP	101	2440		*	mg/Kg	5.05	25.3	07/14/21 0:41	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 20:37	bsu
Antimony, total (3050)	M6020B ICP-MS	505	<0.202	U	*	mg/Kg	0.202	1.01	07/13/21 20:55	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00035	B	*	mg/L	0.0002	0.001	07/12/21 20:37	bsu
Arsenic, total (3050)	M6020B ICP-MS	505	0.648		*	mg/Kg	0.101	0.505	07/13/21 20:55	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 20:37	bsu
Cadmium, total (3050)	M6020B ICP-MS	505	0.0629	B		mg/Kg	0.0253	0.126	07/13/21 20:55	bsu
Calcium (1312)	M6010D ICP	1	3.14			mg/L	0.1	0.5	07/13/21 12:23	jlw
Calcium, total (3050)	M6010D ICP	101	1220			mg/Kg	10.1	50.5	07/14/21 13:20	kja
Copper (1312)	M6020B ICP-MS	1	0.00440		*	mg/L	0.0008	0.002	07/12/21 20:37	bsu
Copper, total (3050)	M6020B ICP-MS	505	9.47		*	mg/Kg	0.404	1.01	07/13/21 20:55	bsu
Iron (1312)	M6010D ICP	1	0.395		*	mg/L	0.06	0.15	07/13/21 12:23	jlw
Iron, total (3050)	M6010D ICP	101	4420		*	mg/Kg	6.06	15.2	07/14/21 13:20	kja
Lead (1312)	M6020B ICP-MS	1	0.00094		*	mg/L	0.0001	0.0005	07/12/21 20:37	bsu
Lead, total (3050)	M6020B ICP-MS	505	2.94		*	mg/Kg	0.0505	0.253	07/13/21 20:55	bsu
Magnesium (1312)	M6010D ICP	1	0.32	B	*	mg/L	0.2	1	07/13/21 12:23	jlw
Magnesium, total (3050)	M6010D ICP	101	586			mg/Kg	20.2	101	07/14/21 0:41	jlw
Manganese (1312)	M6010D ICP	1	0.011	B	*	mg/L	0.01	0.05	07/13/21 12:23	jlw
Manganese, total (3050)	M6010D ICP	101	80.5		*	mg/Kg	1.01	5.05	07/14/21 0:41	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:26	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	3.1	B	*	ng/g	2.63	13.15	07/06/21 14:04	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/13/21 12:23	jlw
Molybdenum, total (3050)	M6010D ICP	101	<2.02	U		mg/Kg	2.02	10.1	07/14/21 0:41	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00042	B	*	mg/L	0.0004	0.001	07/12/21 20:37	bsu
Nickel, total (3050)	M6020B ICP-MS	505	1.41			mg/Kg	0.202	0.505	07/13/21 20:55	bsu
Selenium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.00025	07/12/21 20:37	bsu
Selenium, total (3050)	M6020B ICP-MS	505	<0.0505	U	*	mg/Kg	0.0505	0.126	07/13/21 20:55	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 20:37	bsu
Thallium, total (3050)	M6020B ICP-MS	505	<0.0505	U		mg/Kg	0.0505	0.253	07/13/21 20:55	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/13/21 12:23	jlw
Zinc, total (3050)	M6010D ICP	101	8.59			mg/Kg	2.02	5.05	07/14/21 0:41	jlw

Hudbay Minerals

Project ID:

Sample ID: D2-13

ACZ Sample ID: **L66693-07**

Date Sampled: 06/10/21 07:02

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.6		*	%	0.1	0.5	07/06/21 10:25	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	<0.1	U	*	%	0.1	0.5	07/06/21 10:25	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.6		*	%	0.1	0.5	07/06/21 10:25	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.363		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.4		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.4		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/25/21 21:14	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 9:10	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:00	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 11:48	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 11:48	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:24	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 8:40	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 8:40	jpb
Synthetic Precip. Leaching Procedure	M1312								07/08/21 2:26	zln/gkh

Arizona license number: **AZ0102**

Hudbay Minerals

Project ID:

Sample ID: D2-16

ACZ Sample ID: **L66693-08**

Date Sampled: 06/10/21 08:35

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/12/21 15:28	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/10/21 13:15	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.904		*	mg/L	0.05	0.25	07/13/21 12:27	jlw
Aluminum, total (3050)	M6010D ICP	100	3330		*	mg/Kg	5	25	07/14/21 0:45	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 20:38	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 20:57	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00053	B	*	mg/L	0.0002	0.001	07/12/21 20:38	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	1.14		*	mg/Kg	0.1	0.5	07/13/21 20:57	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 20:38	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.121	B		mg/Kg	0.025	0.125	07/13/21 20:57	bsu
Calcium (1312)	M6010D ICP	1	0.98			mg/L	0.1	0.5	07/13/21 12:27	jlw
Calcium, total (3050)	M6010D ICP	100	1300			mg/Kg	10	50	07/14/21 13:24	kja
Copper (1312)	M6020B ICP-MS	1	0.00293		*	mg/L	0.0008	0.002	07/12/21 20:38	bsu
Copper, total (3050)	M6020B ICP-MS	500	10.9		*	mg/Kg	0.4	1	07/13/21 20:57	bsu
Iron (1312)	M6010D ICP	1	0.489		*	mg/L	0.06	0.15	07/13/21 12:27	jlw
Iron, total (3050)	M6010D ICP	100	8770		*	mg/Kg	6	15	07/14/21 13:24	kja
Lead (1312)	M6020B ICP-MS	1	0.00063		*	mg/L	0.0001	0.0005	07/12/21 20:38	bsu
Lead, total (3050)	M6020B ICP-MS	500	4.19		*	mg/Kg	0.05	0.25	07/13/21 20:57	bsu
Magnesium (1312)	M6010D ICP	1	<0.2	U	*	mg/L	0.2	1	07/13/21 12:27	jlw
Magnesium, total (3050)	M6010D ICP	100	767			mg/Kg	20	100	07/14/21 0:45	jlw
Manganese (1312)	M6010D ICP	1	0.017	B	*	mg/L	0.01	0.05	07/13/21 12:27	jlw
Manganese, total (3050)	M6010D ICP	100	149		*	mg/Kg	1	5	07/14/21 0:45	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:27	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	<2.6	U	*	ng/g	2.6	13	07/06/21 14:13	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/13/21 12:27	jlw
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 0:45	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00041	B	*	mg/L	0.0004	0.001	07/12/21 20:38	bsu
Nickel, total (3050)	M6020B ICP-MS	500	2.32			mg/Kg	0.2	0.5	07/13/21 20:57	bsu
Selenium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.00025	07/12/21 20:38	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.0697	B	*	mg/Kg	0.05	0.125	07/13/21 20:57	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 20:38	bsu
Thallium, total (3050)	M6020B ICP-MS	500	0.0524	B		mg/Kg	0.05	0.25	07/13/21 20:57	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/13/21 12:27	jlw
Zinc, total (3050)	M6010D ICP	100	12.3			mg/Kg	2	5	07/14/21 0:45	jlw

Hudbay Minerals

Project ID:

Sample ID: D2-16

ACZ Sample ID: **L66693-08**

Date Sampled: 06/10/21 08:35

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.1	B	*	%	0.1	0.5	07/06/21 10:38	jpj
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	<0.1	U	*	%	0.1	0.5	07/06/21 10:38	jpj
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.2	B	*	%	0.1	0.5	07/06/21 10:38	jpj
Conductivity @25C	SM2510B									
Conductivity		1	0.175		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.5		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.8		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/25/21 22:27	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 9:14	jpj

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:05	jpj
Digestion - Hot Plate	M3050B ICP								07/12/21 12:03	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 12:03	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:27	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 8:46	jpj
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 8:46	jpj
Synthetic Precip. Leaching Procedure	M1312								07/08/21 3:28	zln/gkh

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: D2-17

ACZ Sample ID: **L66693-09**

Date Sampled: 06/10/21 07:49

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/12/21 15:49	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/10/21 13:15	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.906		*	mg/L	0.05	0.25	07/13/21 12:31	jlw
Aluminum, total (3050)	M6010D ICP	100	3080		*	mg/Kg	5	25	07/14/21 0:49	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 20:42	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 20:59	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00061	B	*	mg/L	0.0002	0.001	07/12/21 20:42	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	1.02		*	mg/Kg	0.1	0.5	07/13/21 20:59	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 20:42	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.0998	B		mg/Kg	0.025	0.125	07/13/21 20:59	bsu
Calcium (1312)	M6010D ICP	1	1.70			mg/L	0.1	0.5	07/13/21 12:31	jlw
Calcium, total (3050)	M6010D ICP	100	1150			mg/Kg	10	50	07/14/21 13:35	kja
Copper (1312)	M6020B ICP-MS	1	0.00318		*	mg/L	0.0008	0.002	07/12/21 20:42	bsu
Copper, total (3050)	M6020B ICP-MS	500	10.00		*	mg/Kg	0.4	1	07/13/21 20:59	bsu
Iron (1312)	M6010D ICP	1	0.499		*	mg/L	0.06	0.15	07/13/21 12:31	jlw
Iron, total (3050)	M6010D ICP	100	5110		*	mg/Kg	6	15	07/14/21 13:35	kja
Lead (1312)	M6020B ICP-MS	1	0.00063		*	mg/L	0.0001	0.0005	07/12/21 20:42	bsu
Lead, total (3050)	M6020B ICP-MS	500	12.0		*	mg/Kg	0.05	0.25	07/13/21 20:59	bsu
Magnesium (1312)	M6010D ICP	1	0.24	B	*	mg/L	0.2	1	07/13/21 12:31	jlw
Magnesium, total (3050)	M6010D ICP	100	656			mg/Kg	20	100	07/14/21 0:49	jlw
Manganese (1312)	M6010D ICP	1	0.016	B	*	mg/L	0.01	0.05	07/13/21 12:31	jlw
Manganese, total (3050)	M6010D ICP	100	127		*	mg/Kg	1	5	07/14/21 0:49	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:28	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	2.9	B	*	ng/g	2.43	12.15	07/06/21 14:22	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/13/21 12:31	jlw
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 0:49	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 20:42	bsu
Nickel, total (3050)	M6020B ICP-MS	500	1.88			mg/Kg	0.2	0.5	07/13/21 20:59	bsu
Selenium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.00025	07/12/21 20:42	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.0629	B	*	mg/Kg	0.05	0.125	07/13/21 20:59	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 20:42	bsu
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 20:59	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/13/21 12:31	jlw
Zinc, total (3050)	M6010D ICP	100	9.88			mg/Kg	2	5	07/14/21 0:49	jlw

Hudbay Minerals

Project ID:

Sample ID: D2-17

ACZ Sample ID: **L66693-09**

Date Sampled: 06/10/21 07:49

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.2	B	*	%	0.1	0.5	07/06/21 10:51	jpj
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	<0.1	U	*	%	0.1	0.5	07/06/21 10:51	jpj
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.2	B	*	%	0.1	0.5	07/06/21 10:51	jpj
Conductivity @25C	SM2510B									
Conductivity		1	0.138		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.8		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.8		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/25/21 23:40	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 9:19	jpj

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:10	jpj
Digestion - Hot Plate	M3050B ICP								07/12/21 12:19	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 12:19	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:30	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 8:53	jpj
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 8:53	jpj
Synthetic Precip. Leaching Procedure	M1312								07/08/21 4:31	zln/gkh

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: D3-1

ACZ Sample ID: **L66693-10**

Date Sampled: 06/07/21 11:29

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/04/21 15:15	kja
Total Hot Plate Digestion	M3010A ICP-MS								07/07/21 0:51	bsu

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.089	B	*	mg/L	0.05	0.25	07/07/21 23:52	jlw
Aluminum, total (3050)	M6010D ICP	100	1330		*	mg/Kg	5	25	07/14/21 0:53	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/09/21 16:47	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 21:00	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00054	B	*	mg/L	0.0002	0.001	07/09/21 16:47	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	1.58		*	mg/Kg	0.1	0.5	07/13/21 21:00	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/09/21 16:47	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.287			mg/Kg	0.025	0.125	07/13/21 21:00	bsu
Calcium (1312)	M6010D ICP	1	8.77			mg/L	0.1	0.5	07/07/21 23:52	jlw
Calcium, total (3050)	M6010D ICP	1000	340000			mg/Kg	100	500	07/14/21 13:39	kja
Copper (1312)	M6020B ICP-MS	1	0.00166	B	*	mg/L	0.0008	0.002	07/09/21 16:47	bsu
Copper, total (3050)	M6020B ICP-MS	500	2.72		*	mg/Kg	0.4	1	07/13/21 21:00	bsu
Iron (1312)	M6010D ICP	1	<0.06	U	*	mg/L	0.06	0.15	07/07/21 23:52	jlw
Iron, total (3050)	M6010D ICP	1000	1580		*	mg/Kg	60	150	07/14/21 13:39	kja
Lead (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:47	bsu
Lead, total (3050)	M6020B ICP-MS	500	11.0		*	mg/Kg	0.05	0.25	07/13/21 21:00	bsu
Magnesium (1312)	M6010D ICP	1	0.68	B	*	mg/L	0.2	1	07/07/21 23:52	jlw
Magnesium, total (3050)	M6010D ICP	100	5400			mg/Kg	20	100	07/14/21 0:53	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/07/21 23:52	jlw
Manganese, total (3050)	M6010D ICP	100	185		*	mg/Kg	1	5	07/14/21 0:53	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 13:52	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	<3.48	U	*	ng/g	3.48	17.4	07/01/21 14:57	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/07/21 23:52	jlw
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 0:53	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/09/21 16:47	bsu
Nickel, total (3050)	M6020B ICP-MS	500	1.91			mg/Kg	0.2	0.5	07/13/21 21:00	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00019	B	*	mg/L	0.0001	0.00025	07/09/21 16:47	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.0731	B	*	mg/Kg	0.05	0.125	07/13/21 21:00	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:47	bsu
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 21:00	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/07/21 23:52	jlw
Zinc, total (3050)	M6010D ICP	100	15.6			mg/Kg	2	5	07/14/21 0:53	jlw

Hudbay Minerals

Project ID:

Sample ID: D3-1

ACZ Sample ID: **L66693-10**

Date Sampled: 06/07/21 11:29

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	11.4		*	%	0.1	0.5	07/06/21 11:04	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	11.2		*	%	0.1	0.5	07/06/21 11:04	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.2	B	*	%	0.1	0.5	07/06/21 11:04	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.510		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.9		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	8.0		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/26/21 0:53	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.02	B	*	%	0.01	0.1	07/06/21 9:23	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:15	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 12:34	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 12:34	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:33	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 9:00	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 9:00	jpb
Synthetic Precip. Leaching Procedure	M1312								07/02/21 1:41	gkh

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: D3-2

ACZ Sample ID: **L66693-11**

Date Sampled: 06/07/21 10:01

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/04/21 15:38	kja
Total Hot Plate Digestion	M3010A ICP-MS								07/07/21 2:27	bsu

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.099	B	*	mg/L	0.05	0.25	07/07/21 23:56	jlw
Aluminum, total (3050)	M6010D ICP	100	2110		*	mg/Kg	5	25	07/14/21 0:56	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/09/21 16:49	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 21:02	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00061	B	*	mg/L	0.0002	0.001	07/09/21 16:49	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	1.29		*	mg/Kg	0.1	0.5	07/13/21 21:02	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/09/21 16:49	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.299			mg/Kg	0.025	0.125	07/13/21 21:02	bsu
Calcium (1312)	M6010D ICP	1	7.58			mg/L	0.1	0.5	07/07/21 23:56	jlw
Calcium, total (3050)	M6010D ICP	1000	341000			mg/Kg	100	500	07/14/21 13:43	kja
Copper (1312)	M6020B ICP-MS	1	0.00124	B	*	mg/L	0.0008	0.002	07/09/21 16:49	bsu
Copper, total (3050)	M6020B ICP-MS	500	8.57		*	mg/Kg	0.4	1	07/13/21 21:02	bsu
Iron (1312)	M6010D ICP	1	<0.06	U	*	mg/L	0.06	0.15	07/07/21 23:56	jlw
Iron, total (3050)	M6010D ICP	1000	1830		*	mg/Kg	60	150	07/14/21 13:43	kja
Lead (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:49	bsu
Lead, total (3050)	M6020B ICP-MS	500	6.49		*	mg/Kg	0.05	0.25	07/13/21 21:02	bsu
Magnesium (1312)	M6010D ICP	1	0.59	B	*	mg/L	0.2	1	07/07/21 23:56	jlw
Magnesium, total (3050)	M6010D ICP	100	5000			mg/Kg	20	100	07/14/21 0:56	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/07/21 23:56	jlw
Manganese, total (3050)	M6010D ICP	100	175		*	mg/Kg	1	5	07/14/21 0:56	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:35	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	<3.28	U	*	ng/g	3.28	16.4	07/01/21 15:05	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/07/21 23:56	jlw
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 0:56	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/09/21 16:49	bsu
Nickel, total (3050)	M6020B ICP-MS	500	1.81			mg/Kg	0.2	0.5	07/13/21 21:02	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00011	B	*	mg/L	0.0001	0.00025	07/09/21 16:49	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.0561	B	*	mg/Kg	0.05	0.125	07/13/21 21:02	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:49	bsu
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 21:02	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/07/21 23:56	jlw
Zinc, total (3050)	M6010D ICP	100	14.5			mg/Kg	2	5	07/14/21 0:56	jlw

Hudbay Minerals

Project ID:

Sample ID: D3-2

ACZ Sample ID: **L66693-11**

Date Sampled: 06/07/21 10:01

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	11.1		*	%	0.1	0.5	07/06/21 11:17	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	10.8		*	%	0.1	0.5	07/06/21 11:17	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	07/06/21 11:17	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.252		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	23.0		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	8.0		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/26/21 2:06	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.02	B	*	%	0.01	0.1	07/06/21 9:27	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:20	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 12:49	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 12:49	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:36	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 9:06	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 9:06	jpb
Synthetic Precip. Leaching Procedure	M1312								07/02/21 2:28	gkh

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: D3-3

ACZ Sample ID: **L66693-12**

Date Sampled: 06/07/21 10:45

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/04/21 16:24	kja
Total Hot Plate Digestion	M3010A ICP-MS								07/07/21 5:39	bsu

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.092	B	*	mg/L	0.05	0.25	07/08/21 0:04	jlw
Aluminum, total (3050)	M6010D ICP	100	1610		*	mg/Kg	5	25	07/14/21 1:00	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/09/21 16:52	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 21:04	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00087	B	*	mg/L	0.0002	0.001	07/09/21 16:52	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	1.79		*	mg/Kg	0.1	0.5	07/13/21 21:04	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/09/21 16:52	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.266			mg/Kg	0.025	0.125	07/13/21 21:04	bsu
Calcium (1312)	M6010D ICP	1	8.36			mg/L	0.1	0.5	07/08/21 0:04	jlw
Calcium, total (3050)	M6010D ICP	1000	341000			mg/Kg	100	500	07/14/21 13:47	kja
Copper (1312)	M6020B ICP-MS	1	0.00359		*	mg/L	0.0008	0.002	07/09/21 16:52	bsu
Copper, total (3050)	M6020B ICP-MS	500	7.51		*	mg/Kg	0.4	1	07/13/21 21:04	bsu
Iron (1312)	M6010D ICP	1	<0.06	U	*	mg/L	0.06	0.15	07/08/21 0:04	jlw
Iron, total (3050)	M6010D ICP	1000	1660		*	mg/Kg	60	150	07/14/21 13:47	kja
Lead (1312)	M6020B ICP-MS	1	0.00017	B	*	mg/L	0.0001	0.0005	07/09/21 16:52	bsu
Lead, total (3050)	M6020B ICP-MS	500	7.52		*	mg/Kg	0.05	0.25	07/13/21 21:04	bsu
Magnesium (1312)	M6010D ICP	1	0.60	B	*	mg/L	0.2	1	07/08/21 0:04	jlw
Magnesium, total (3050)	M6010D ICP	100	5330			mg/Kg	20	100	07/14/21 1:00	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/08/21 0:04	jlw
Manganese, total (3050)	M6010D ICP	100	167		*	mg/Kg	1	5	07/14/21 1:00	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 13:56	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	<3.42	U	*	ng/g	3.42	17.1	07/01/21 15:14	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/08/21 0:04	jlw
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 1:00	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/09/21 16:52	bsu
Nickel, total (3050)	M6020B ICP-MS	500	2.43			mg/Kg	0.2	0.5	07/13/21 21:04	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00010	B	*	mg/L	0.0001	0.00025	07/09/21 16:52	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.0683	B	*	mg/Kg	0.05	0.125	07/13/21 21:04	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:52	bsu
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 21:04	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/08/21 0:04	jlw
Zinc, total (3050)	M6010D ICP	100	17.8			mg/Kg	2	5	07/14/21 1:00	jlw

Hudbay Minerals

Project ID:

Sample ID: D3-3

ACZ Sample ID: **L66693-12**

Date Sampled: 06/07/21 10:45

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	11.4		*	%	0.1	0.5	07/06/21 11:29	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	11.1		*	%	0.1	0.5	07/06/21 11:29	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	07/06/21 11:29	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.272		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.9		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.9		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/26/21 3:19	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.01	B	*	%	0.01	0.1	07/06/21 9:31	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:25	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 13:05	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 13:05	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:39	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 9:13	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 9:13	jpb
Synthetic Precip. Leaching Procedure	M1312								07/02/21 4:02	gkh

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: D3-4A

ACZ Sample ID: **L66693-13**

Date Sampled: 06/07/21 11:08

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/04/21 16:48	kja
Total Hot Plate Digestion	M3010A ICP-MS								07/07/21 7:15	bsu

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.119	B	*	mg/L	0.05	0.25	07/08/21 0:08	jlw
Aluminum, total (3050)	M6010D ICP	100	2010		*	mg/Kg	5	25	07/14/21 1:04	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/09/21 16:54	bsu
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 21:06	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00064	B	*	mg/L	0.0002	0.001	07/09/21 16:54	bsu
Arsenic, total (3050)	M6020B ICP-MS	500	1.57		*	mg/Kg	0.1	0.5	07/13/21 21:06	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/09/21 16:54	bsu
Cadmium, total (3050)	M6020B ICP-MS	500	0.233			mg/Kg	0.025	0.125	07/13/21 21:06	bsu
Calcium (1312)	M6010D ICP	1	7.80			mg/L	0.1	0.5	07/08/21 0:08	jlw
Calcium, total (3050)	M6010D ICP	1000	288000			mg/Kg	100	500	07/14/21 13:51	kja
Copper (1312)	M6020B ICP-MS	1	0.0398		*	mg/L	0.0008	0.002	07/09/21 16:54	bsu
Copper, total (3050)	M6020B ICP-MS	500	61.4		*	mg/Kg	0.4	1	07/13/21 21:06	bsu
Iron (1312)	M6010D ICP	1	<0.06	U	*	mg/L	0.06	0.15	07/08/21 0:08	jlw
Iron, total (3050)	M6010D ICP	1000	2110		*	mg/Kg	60	150	07/14/21 13:51	kja
Lead (1312)	M6020B ICP-MS	1	0.00182		*	mg/L	0.0001	0.0005	07/09/21 16:54	bsu
Lead, total (3050)	M6020B ICP-MS	500	6.78		*	mg/Kg	0.05	0.25	07/13/21 21:06	bsu
Magnesium (1312)	M6010D ICP	1	0.61	B	*	mg/L	0.2	1	07/08/21 0:08	jlw
Magnesium, total (3050)	M6010D ICP	100	3870			mg/Kg	20	100	07/14/21 1:04	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/08/21 0:08	jlw
Manganese, total (3050)	M6010D ICP	100	182		*	mg/Kg	1	5	07/14/21 1:04	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 13:57	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	2.79	B	*	ng/g	2.69	13.45	07/01/21 15:23	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/08/21 0:08	jlw
Molybdenum, total (3050)	M6010D ICP	100	<2	U		mg/Kg	2	10	07/14/21 1:04	jlw
Nickel (1312)	M6020B ICP-MS	1	0.00050	B	*	mg/L	0.0004	0.001	07/09/21 16:54	bsu
Nickel, total (3050)	M6020B ICP-MS	500	1.97			mg/Kg	0.2	0.5	07/13/21 21:06	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00012	B	*	mg/L	0.0001	0.00025	07/09/21 16:54	bsu
Selenium, total (3050)	M6020B ICP-MS	500	0.0653	B	*	mg/Kg	0.05	0.125	07/13/21 21:06	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/09/21 16:54	bsu
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 21:06	bsu
Zinc (1312)	M6010D ICP	1	0.026	B	*	mg/L	0.02	0.05	07/08/21 0:08	jlw
Zinc, total (3050)	M6010D ICP	100	19.4			mg/Kg	2	5	07/14/21 1:04	jlw

Hudbay Minerals

Project ID:

Sample ID: D3-4A

ACZ Sample ID: **L66693-13**

Date Sampled: 06/07/21 11:08

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	10.9		*	%	0.1	0.5	07/06/21 11:42	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	10.6		*	%	0.1	0.5	07/06/21 11:42	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	07/06/21 11:42	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.279		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.9		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.9		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/26/21 4:32	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	0.01	B	*	%	0.01	0.1	07/06/21 9:35	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:30	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 13:20	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 13:20	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:42	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 9:20	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 9:20	jpb
Synthetic Precip. Leaching Procedure	M1312								07/02/21 4:48	gkh

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: D3-4B

ACZ Sample ID: **L66693-14**

Date Sampled: 06/08/21 07:24

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/08/21 15:30	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.179	B	*	mg/L	0.05	0.25	07/12/21 19:09	kja
Aluminum, total (3050)	M6010D ICP	100	2960		*	mg/Kg	5	25	07/14/21 1:08	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 18:06	mfm
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 21:12	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00080	B	*	mg/L	0.0002	0.001	07/12/21 18:06	mfm
Arsenic, total (3050)	M6020B ICP-MS	500	2.08		*	mg/Kg	0.1	0.5	07/13/21 21:12	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 18:06	mfm
Cadmium, total (3050)	M6020B ICP-MS	500	0.309			mg/Kg	0.025	0.125	07/13/21 21:12	bsu
Calcium (1312)	M6010D ICP	1	8.49			mg/L	0.1	0.5	07/12/21 19:09	kja
Calcium, total (3050)	M6010D ICP	1000	233000			mg/Kg	100	500	07/14/21 13:55	kja
Copper (1312)	M6020B ICP-MS	1	0.00791		*	mg/L	0.0008	0.002	07/12/21 18:06	mfm
Copper, total (3050)	M6020B ICP-MS	500	96.1		*	mg/Kg	0.4	1	07/13/21 21:12	bsu
Iron (1312)	M6010D ICP	1	<0.06	U	*	mg/L	0.06	0.15	07/12/21 19:09	kja
Iron, total (3050)	M6010D ICP	1000	5370		*	mg/Kg	60	150	07/14/21 13:55	kja
Lead (1312)	M6020B ICP-MS	1	0.00021	B	*	mg/L	0.0001	0.0005	07/12/21 18:06	mfm
Lead, total (3050)	M6020B ICP-MS	500	9.32		*	mg/Kg	0.05	0.25	07/13/21 21:12	bsu
Magnesium (1312)	M6010D ICP	1	0.55	B	*	mg/L	0.2	1	07/12/21 19:09	kja
Magnesium, total (3050)	M6010D ICP	100	5150			mg/Kg	20	100	07/14/21 1:08	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/12/21 19:09	kja
Manganese, total (3050)	M6010D ICP	100	225		*	mg/Kg	1	5	07/14/21 1:08	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:09	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	6.59	B	*	ng/g	2.3	11.5	07/06/21 14:30	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 19:09	kja
Molybdenum, total (3050)	M6010D ICP	100	2.35	B		mg/Kg	2	10	07/14/21 1:08	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 18:06	mfm
Nickel, total (3050)	M6020B ICP-MS	500	3.00			mg/Kg	0.2	0.5	07/13/21 21:12	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00020	B	*	mg/L	0.0001	0.00025	07/14/21 14:47	mfm
Selenium, total (3050)	M6020B ICP-MS	500	0.141		*	mg/Kg	0.05	0.125	07/13/21 21:12	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 18:06	mfm
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 21:12	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 19:09	kja
Zinc, total (3050)	M6010D ICP	100	26.0			mg/Kg	2	5	07/14/21 1:08	jlw

Hudbay Minerals

Project ID:

Sample ID: D3-4B

ACZ Sample ID: **L66693-14**

Date Sampled: 06/08/21 07:24

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	9.9		*	%	0.1	0.5	07/06/21 11:55	jpj
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	9.6		*	%	0.1	0.5	07/06/21 11:55	jpj
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	07/06/21 11:55	jpj
Conductivity @25C	SM2510B									
Conductivity		1	0.179		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.6		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	8.1		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/26/21 5:45	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 9:39	jpj

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:35	jpj
Digestion - Hot Plate	M3050B ICP								07/12/21 13:36	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 13:36	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:45	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 9:26	jpj
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 9:26	jpj
Synthetic Precip. Leaching Procedure	M1312								07/07/21 7:22	zln/gkh

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: D3-5A

ACZ Sample ID: **L66693-15**

Date Sampled: 06/08/21 07:51

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/08/21 15:53	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.267		*	mg/L	0.05	0.25	07/12/21 19:13	kja
Aluminum, total (3050)	M6010D ICP	100	3020		*	mg/Kg	5	25	07/14/21 1:19	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 18:09	mfm
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 21:13	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00103		*	mg/L	0.0002	0.001	07/12/21 18:09	mfm
Arsenic, total (3050)	M6020B ICP-MS	500	2.39		*	mg/Kg	0.1	0.5	07/13/21 21:13	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 18:09	mfm
Cadmium, total (3050)	M6020B ICP-MS	500	0.301			mg/Kg	0.025	0.125	07/13/21 21:13	bsu
Calcium (1312)	M6010D ICP	1	11.0			mg/L	0.1	0.5	07/12/21 19:13	kja
Calcium, total (3050)	M6010D ICP	500	193000			mg/Kg	50	250	07/14/21 13:59	kja
Copper (1312)	M6020B ICP-MS	1	0.0162		*	mg/L	0.0008	0.002	07/12/21 18:09	mfm
Copper, total (3050)	M6020B ICP-MS	500	103		*	mg/Kg	0.4	1	07/13/21 21:13	bsu
Iron (1312)	M6010D ICP	1	0.086	B	*	mg/L	0.06	0.15	07/12/21 19:13	kja
Iron, total (3050)	M6010D ICP	500	5170		*	mg/Kg	30	75	07/14/21 13:59	kja
Lead (1312)	M6020B ICP-MS	1	0.00067		*	mg/L	0.0001	0.0005	07/12/21 18:09	mfm
Lead, total (3050)	M6020B ICP-MS	500	11.5		*	mg/Kg	0.05	0.25	07/13/21 21:13	bsu
Magnesium (1312)	M6010D ICP	1	0.88	B	*	mg/L	0.2	1	07/12/21 19:13	kja
Magnesium, total (3050)	M6010D ICP	100	4880			mg/Kg	20	100	07/14/21 1:19	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/12/21 19:13	kja
Manganese, total (3050)	M6010D ICP	100	261		*	mg/Kg	1	5	07/14/21 1:19	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:12	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	3.47	B	*	ng/g	2.18	10.9	07/06/21 14:39	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 19:13	kja
Molybdenum, total (3050)	M6010D ICP	100	3.44	B		mg/Kg	2	10	07/14/21 1:19	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 18:09	mfm
Nickel, total (3050)	M6020B ICP-MS	500	2.77			mg/Kg	0.2	0.5	07/13/21 21:13	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00015	B	*	mg/L	0.0001	0.00025	07/14/21 14:49	mfm
Selenium, total (3050)	M6020B ICP-MS	500	0.131		*	mg/Kg	0.05	0.125	07/13/21 21:13	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 18:09	mfm
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 21:13	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 19:13	kja
Zinc, total (3050)	M6010D ICP	100	31.5			mg/Kg	2	5	07/14/21 1:19	jlw

Hudbay Minerals

Project ID:

Sample ID: D3-5A

ACZ Sample ID: **L66693-15**

Date Sampled: 06/08/21 07:51

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	9.5		*	%	0.1	0.5	07/06/21 12:08	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	9.2		*	%	0.1	0.5	07/06/21 12:08	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	07/06/21 12:08	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.311		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.7		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.8		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/26/21 6:58	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 9:43	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:40	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 13:51	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 13:51	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:48	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 9:33	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 9:33	jpb
Synthetic Precip. Leaching Procedure	M1312								07/07/21 8:23	zln/gkh

Arizona license number: **AZ0102**

Hudbay Minerals

Project ID:

Sample ID: D3-5B

ACZ Sample ID: **L66693-16**

Date Sampled: 06/08/21 10:09

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/08/21 16:17	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.220	B	*	mg/L	0.05	0.25	07/12/21 19:17	kja
Aluminum, total (3050)	M6010D ICP	100	3280		*	mg/Kg	5	25	07/14/21 1:23	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 18:11	mfm
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 21:19	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00106		*	mg/L	0.0002	0.001	07/12/21 18:11	mfm
Arsenic, total (3050)	M6020B ICP-MS	500	2.50		*	mg/Kg	0.1	0.5	07/13/21 21:19	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 18:11	mfm
Cadmium, total (3050)	M6020B ICP-MS	500	0.253			mg/Kg	0.025	0.125	07/13/21 21:19	bsu
Calcium (1312)	M6010D ICP	1	14.5			mg/L	0.1	0.5	07/12/21 19:17	kja
Calcium, total (3050)	M6010D ICP	500	150000			mg/Kg	50	250	07/14/21 14:03	kja
Copper (1312)	M6020B ICP-MS	1	0.0129		*	mg/L	0.0008	0.002	07/12/21 18:11	mfm
Copper, total (3050)	M6020B ICP-MS	500	71.3		*	mg/Kg	0.4	1	07/13/21 21:19	bsu
Iron (1312)	M6010D ICP	1	0.087	B	*	mg/L	0.06	0.15	07/12/21 19:17	kja
Iron, total (3050)	M6010D ICP	500	6810		*	mg/Kg	30	75	07/14/21 14:03	kja
Lead (1312)	M6020B ICP-MS	1	0.00061		*	mg/L	0.0001	0.0005	07/12/21 18:11	mfm
Lead, total (3050)	M6020B ICP-MS	500	13.1		*	mg/Kg	0.05	0.25	07/13/21 21:19	bsu
Magnesium (1312)	M6010D ICP	1	0.90	B	*	mg/L	0.2	1	07/12/21 19:17	kja
Magnesium, total (3050)	M6010D ICP	100	4160			mg/Kg	20	100	07/14/21 1:23	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/12/21 19:17	kja
Manganese, total (3050)	M6010D ICP	100	213		*	mg/Kg	1	5	07/14/21 1:23	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:13	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	3.11	B	*	ng/g	2.24	11.2	07/06/21 14:55	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 19:17	kja
Molybdenum, total (3050)	M6010D ICP	100	3.17	B		mg/Kg	2	10	07/14/21 1:23	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 18:11	mfm
Nickel, total (3050)	M6020B ICP-MS	500	2.89			mg/Kg	0.2	0.5	07/13/21 21:19	bsu
Selenium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.00025	07/14/21 14:51	mfm
Selenium, total (3050)	M6020B ICP-MS	500	0.165		*	mg/Kg	0.05	0.125	07/13/21 21:19	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 18:11	mfm
Thallium, total (3050)	M6020B ICP-MS	500	0.0600	B		mg/Kg	0.05	0.25	07/13/21 21:19	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 19:17	kja
Zinc, total (3050)	M6010D ICP	100	26.3			mg/Kg	2	5	07/14/21 1:23	jlw

Hudbay Minerals

Project ID:

Sample ID: D3-5B

ACZ Sample ID: **L66693-16**

Date Sampled: 06/08/21 10:09

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	8.5		*	%	0.1	0.5	07/06/21 12:21	jpj
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	8.1		*	%	0.1	0.5	07/06/21 12:21	jpj
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.4	B	*	%	0.1	0.5	07/06/21 12:21	jpj
Conductivity @25C	SM2510B									
Conductivity		1	0.420		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	23.1		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.4		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/26/21 8:11	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 9:47	jpj

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:45	jpj
Digestion - Hot Plate	M3050B ICP								07/12/21 14:37	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 14:37	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:51	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 9:40	jpj
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 9:40	jpj
Synthetic Precip. Leaching Procedure	M1312								07/07/21 9:25	zln/gkh

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: D3-6

ACZ Sample ID: **L66693-17**

Date Sampled: 06/08/21 11:05

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/08/21 16:40	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.446		*	mg/L	0.05	0.25	07/12/21 19:24	kja
Aluminum, total (3050)	M6010D ICP	101	3450		*	mg/Kg	5.05	25.3	07/14/21 1:27	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 18:13	mfm
Antimony, total (3050)	M6020B ICP-MS	505	<0.202	U	*	mg/Kg	0.202	1.01	07/13/21 21:21	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00075	B	*	mg/L	0.0002	0.001	07/12/21 18:13	mfm
Arsenic, total (3050)	M6020B ICP-MS	505	2.07		*	mg/Kg	0.101	0.505	07/13/21 21:21	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 18:13	mfm
Cadmium, total (3050)	M6020B ICP-MS	505	0.170			mg/Kg	0.0253	0.126	07/13/21 21:21	bsu
Calcium (1312)	M6010D ICP	1	10.7			mg/L	0.1	0.5	07/12/21 19:24	kja
Calcium, total (3050)	M6010D ICP	505	95800			mg/Kg	50.5	253	07/15/21 14:35	jlw
Copper (1312)	M6020B ICP-MS	1	0.0133		*	mg/L	0.0008	0.002	07/12/21 18:13	mfm
Copper, total (3050)	M6020B ICP-MS	505	77.7		*	mg/Kg	0.404	1.01	07/13/21 21:21	bsu
Iron (1312)	M6010D ICP	1	0.153		*	mg/L	0.06	0.15	07/12/21 19:24	kja
Iron, total (3050)	M6010D ICP	202	6140		*	mg/Kg	12.1	30.3	07/14/21 14:07	kja
Lead (1312)	M6020B ICP-MS	1	0.00062		*	mg/L	0.0001	0.0005	07/12/21 18:13	mfm
Lead, total (3050)	M6020B ICP-MS	505	6.65		*	mg/Kg	0.0505	0.253	07/13/21 21:21	bsu
Magnesium (1312)	M6010D ICP	1	0.56	B	*	mg/L	0.2	1	07/12/21 19:24	kja
Magnesium, total (3050)	M6010D ICP	101	3920			mg/Kg	20.2	101	07/14/21 1:27	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/12/21 19:24	kja
Manganese, total (3050)	M6010D ICP	101	174		*	mg/Kg	1.01	5.05	07/14/21 1:27	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:13	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	<2.57	U	*	ng/g	2.57	12.85	07/06/21 15:03	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 19:24	kja
Molybdenum, total (3050)	M6010D ICP	101	2.31	B		mg/Kg	2.02	10.1	07/14/21 1:27	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 18:13	mfm
Nickel, total (3050)	M6020B ICP-MS	505	2.71			mg/Kg	0.202	0.505	07/13/21 21:21	bsu
Selenium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.00025	07/14/21 14:53	mfm
Selenium, total (3050)	M6020B ICP-MS	505	0.124	B	*	mg/Kg	0.0505	0.126	07/13/21 21:21	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 18:13	mfm
Thallium, total (3050)	M6020B ICP-MS	505	<0.0505	U		mg/Kg	0.0505	0.253	07/13/21 21:21	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 19:24	kja
Zinc, total (3050)	M6010D ICP	101	21.2			mg/Kg	2.02	5.05	07/14/21 1:27	jlw

Hudbay Minerals

Project ID:

Sample ID: D3-6

ACZ Sample ID: **L66693-17**

Date Sampled: 06/08/21 11:05

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	5.7		*	%	0.1	0.5	07/06/21 12:34	jpb
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	5.4		*	%	0.1	0.5	07/06/21 12:34	jpb
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	07/06/21 12:34	jpb
Conductivity @25C	SM2510B									
Conductivity		1	0.299		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	23.0		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	8.0		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/26/21 9:24	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 9:51	jpb

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:50	jpb
Digestion - Hot Plate	M3050B ICP								07/12/21 14:53	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 14:53	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:54	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 9:46	jpb
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 9:46	jpb
Synthetic Precip. Leaching Procedure	M1312								07/07/21 10:26	zln/gkh

Arizona license number: **AZ0102**

Hudbay Minerals

Project ID:

Sample ID: D3-7

ACZ Sample ID: **L66693-18**

Date Sampled: 06/08/21 11:31

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/08/21 17:03	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.237	B	*	mg/L	0.05	0.25	07/12/21 19:28	kja
Aluminum, total (3050)	M6010D ICP	101	4090		*	mg/Kg	5.05	25.3	07/14/21 1:31	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 18:14	mfm
Antimony, total (3050)	M6020B ICP-MS	505	<0.202	U	*	mg/Kg	0.202	1.01	07/13/21 21:23	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00102		*	mg/L	0.0002	0.001	07/12/21 18:14	mfm
Arsenic, total (3050)	M6020B ICP-MS	505	2.35		*	mg/Kg	0.101	0.505	07/13/21 21:23	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 18:14	mfm
Cadmium, total (3050)	M6020B ICP-MS	505	0.294			mg/Kg	0.0253	0.126	07/13/21 21:23	bsu
Calcium (1312)	M6010D ICP	1	11.9			mg/L	0.1	0.5	07/12/21 19:28	kja
Calcium, total (3050)	M6010D ICP	505	114000			mg/Kg	50.5	253	07/14/21 14:11	kja
Copper (1312)	M6020B ICP-MS	1	0.0165		*	mg/L	0.0008	0.002	07/12/21 18:14	mfm
Copper, total (3050)	M6020B ICP-MS	505	136		*	mg/Kg	0.404	1.01	07/13/21 21:23	bsu
Iron (1312)	M6010D ICP	1	0.086	B	*	mg/L	0.06	0.15	07/12/21 19:28	kja
Iron, total (3050)	M6010D ICP	505	6240		*	mg/Kg	30.3	75.8	07/14/21 14:11	kja
Lead (1312)	M6020B ICP-MS	1	0.00040	B	*	mg/L	0.0001	0.0005	07/12/21 18:14	mfm
Lead, total (3050)	M6020B ICP-MS	505	7.59		*	mg/Kg	0.0505	0.253	07/13/21 21:23	bsu
Magnesium (1312)	M6010D ICP	1	0.66	B	*	mg/L	0.2	1	07/12/21 19:28	kja
Magnesium, total (3050)	M6010D ICP	101	3810			mg/Kg	20.2	101	07/14/21 1:31	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/12/21 19:28	kja
Manganese, total (3050)	M6010D ICP	101	219		*	mg/Kg	1.01	5.05	07/14/21 1:31	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:14	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	3.52	B	*	ng/g	2.31	11.55	07/06/21 15:12	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 19:28	kja
Molybdenum, total (3050)	M6010D ICP	101	3.49	B		mg/Kg	2.02	10.1	07/14/21 1:31	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 18:14	mfm
Nickel, total (3050)	M6020B ICP-MS	505	3.31			mg/Kg	0.202	0.505	07/13/21 21:23	bsu
Selenium (1312)	M6020B ICP-MS	1	0.00013	B	*	mg/L	0.0001	0.00025	07/14/21 14:55	mfm
Selenium, total (3050)	M6020B ICP-MS	505	0.158		*	mg/Kg	0.0505	0.126	07/13/21 21:23	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 18:14	mfm
Thallium, total (3050)	M6020B ICP-MS	505	0.0578	B		mg/Kg	0.0505	0.253	07/13/21 21:23	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 19:28	kja
Zinc, total (3050)	M6010D ICP	101	37.5			mg/Kg	2.02	5.05	07/14/21 1:31	jlw

Hudbay Minerals

Project ID:

Sample ID: D3-7

ACZ Sample ID: **L66693-18**

Date Sampled: 06/08/21 11:31

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	6.2		*	%	0.1	0.5	07/06/21 12:47	jpj
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	5.7		*	%	0.1	0.5	07/06/21 12:47	jpj
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.5		*	%	0.1	0.5	07/06/21 12:47	jpj
Conductivity @25C	SM2510B									
Conductivity		1	0.415		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	23.2		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	7.6		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/26/21 10:37	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 9:55	jpj

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 16:55	jpj
Digestion - Hot Plate	M3050B ICP								07/12/21 15:08	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 15:08	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 17:57	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 9:53	jpj
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 9:53	jpj
Synthetic Precip. Leaching Procedure	M1312								07/07/21 11:27	zln/gkh

Arizona license number: AZ0102

Hudbay Minerals

Project ID:

Sample ID: D3-8

ACZ Sample ID: **L66693-19**

Date Sampled: 06/08/21 12:40

Date Received: 06/23/21

Sample Matrix: Soil

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M3010A ICP								07/08/21 17:27	jlw
Total Hot Plate Digestion	M3010A ICP-MS								07/09/21 15:55	mfm

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum (1312)	M6010D ICP	1	0.442		*	mg/L	0.05	0.25	07/12/21 19:32	kja
Aluminum, total (3050)	M6010D ICP	100	2320		*	mg/Kg	5	25	07/14/21 1:35	jlw
Antimony (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.002	07/12/21 18:16	mfm
Antimony, total (3050)	M6020B ICP-MS	500	<0.2	U	*	mg/Kg	0.2	1	07/13/21 21:25	bsu
Arsenic (1312)	M6020B ICP-MS	1	0.00087	B	*	mg/L	0.0002	0.001	07/12/21 18:16	mfm
Arsenic, total (3050)	M6020B ICP-MS	500	1.15		*	mg/Kg	0.1	0.5	07/13/21 21:25	bsu
Cadmium (1312)	M6020B ICP-MS	1	<0.00005	U	*	mg/L	0.00005	0.00025	07/12/21 18:16	mfm
Cadmium, total (3050)	M6020B ICP-MS	500	0.0998	B		mg/Kg	0.025	0.125	07/13/21 21:25	bsu
Calcium (1312)	M6010D ICP	1	10.1			mg/L	0.1	0.5	07/12/21 19:32	kja
Calcium, total (3050)	M6010D ICP	100	30100			mg/Kg	10	50	07/14/21 14:22	kja
Copper (1312)	M6020B ICP-MS	1	0.0132		*	mg/L	0.0008	0.002	07/12/21 18:16	mfm
Copper, total (3050)	M6020B ICP-MS	500	80.5		*	mg/Kg	0.4	1	07/13/21 21:25	bsu
Iron (1312)	M6010D ICP	1	0.164		*	mg/L	0.06	0.15	07/12/21 19:32	kja
Iron, total (3050)	M6010D ICP	100	4170		*	mg/Kg	6	15	07/14/21 14:22	kja
Lead (1312)	M6020B ICP-MS	1	0.00047	B	*	mg/L	0.0001	0.0005	07/12/21 18:16	mfm
Lead, total (3050)	M6020B ICP-MS	500	4.51		*	mg/Kg	0.05	0.25	07/13/21 21:25	bsu
Magnesium (1312)	M6010D ICP	1	0.51	B	*	mg/L	0.2	1	07/12/21 19:32	kja
Magnesium, total (3050)	M6010D ICP	100	1310			mg/Kg	20	100	07/14/21 1:35	jlw
Manganese (1312)	M6010D ICP	1	<0.01	U	*	mg/L	0.01	0.05	07/12/21 19:32	kja
Manganese, total (3050)	M6010D ICP	100	125		*	mg/Kg	1	5	07/14/21 1:35	jlw
Mercury (1312)	M7470A CVAA	1	<0.0002	U	*	mg/L	0.0002	0.001	07/14/21 15:15	mlh
Mercury by Direct Combustion AA	M7473 CVAAS	1	3	B	*	ng/g	2.52	12.6	07/01/21 15:32	mlh
Molybdenum (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.1	07/12/21 19:32	kja
Molybdenum, total (3050)	M6010D ICP	100	2.47	B		mg/Kg	2	10	07/14/21 1:35	jlw
Nickel (1312)	M6020B ICP-MS	1	<0.0004	U	*	mg/L	0.0004	0.001	07/12/21 18:16	mfm
Nickel, total (3050)	M6020B ICP-MS	500	1.85			mg/Kg	0.2	0.5	07/13/21 21:25	bsu
Selenium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.00025	07/14/21 14:56	mfm
Selenium, total (3050)	M6020B ICP-MS	500	0.0805	B	*	mg/Kg	0.05	0.125	07/13/21 21:25	bsu
Thallium (1312)	M6020B ICP-MS	1	<0.0001	U	*	mg/L	0.0001	0.0005	07/12/21 18:16	mfm
Thallium, total (3050)	M6020B ICP-MS	500	<0.05	U		mg/Kg	0.05	0.25	07/13/21 21:25	bsu
Zinc (1312)	M6010D ICP	1	<0.02	U	*	mg/L	0.02	0.05	07/12/21 19:32	kja
Zinc, total (3050)	M6010D ICP	100	15.2			mg/Kg	2	5	07/14/21 1:35	jlw

Hudbay Minerals

Project ID:

Sample ID: D3-8

ACZ Sample ID: **L66693-19**

Date Sampled: 06/08/21 12:40

Date Received: 06/23/21

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	2.2		*	%	0.1	0.5	07/06/21 12:59	jpj
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	1.9		*	%	0.1	0.5	07/06/21 12:59	jpj
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	07/06/21 12:59	jpj
Conductivity @25C	SM2510B									
Conductivity		1	0.237		*	mmhos/cm	0.001	0.01	07/15/21 0:00	jms
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
Temperature		1	22.6		*	C	0.1	0.1	07/15/21 0:00	jms
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2									
Max Particle Size		1	2000		*	um			07/15/21 0:00	jms
pH		1	8.0		*	units	0.1	0.1	07/15/21 0:00	jms
Solids, Percent	D2216-80	1	99.9		*	%	0.1	0.5	06/26/21 11:50	zln
Sulfur, total	ASTM D-4239-85C, LECO Furnace	1	<0.01	U	*	%	0.01	0.1	07/06/21 9:59	jpj

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				06/28/21 17:00	jpj
Digestion - Hot Plate	M3050B ICP								07/12/21 15:23	mep
Digestion - Hot Plate	M3050B ICP-MS								07/12/21 15:23	mep
Saturated Paste Extraction	USDA No. 60 (2)				*				07/14/21 18:00	jms
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2				*				06/29/21 10:00	jpj
Sieve-250 um (60 mesh)	ASA No.9, 15-4.2.2				*				06/29/21 10:00	jpj
Synthetic Precip. Leaching Procedure	M1312								07/07/21 12:28	zln/gkh

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf>

REP001.03.15.02

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Aluminum (1312)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	2		2.002	mg/L	100	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.15	0.15			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.15	0.15			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	1.0013		1.034	mg/L	103	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	1.0013	.148	1.214	mg/L	106	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	1.0013	.148	1.202	mg/L	105	75	125	1	20	
L66693-11DUP	DUP	07/08/21 0:00			.099	.099	mg/L				0	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	2		1.952	mg/L	98	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.15	0.15			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.15	0.15			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	1.0013		.995	mg/L	99	80	120			
L66692-11DUP	DUP	07/12/21 18:36			.316	.254	mg/L				22	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	1.0013	.351	1.412	mg/L	106	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	1.0013	.351	1.426	mg/L	107	75	125	1	20	
WG523072													
WG523072ICV	ICV	07/13/21 10:56	II210712-1	2		1.959	mg/L	98	90	110			
WG523072ICB	ICB	07/13/21 11:00				U	mg/L		-0.15	0.15			
WG522653PBS	PBS	07/13/21 11:24				.1	mg/L		-0.15	0.15			
WG522653LFB1	LFB	07/13/21 11:28	II210708-3	1.0008		1.048	mg/L	105	80	120			
L66691-11MS	MS	07/13/21 11:36	II210708-3	1.0008	.65	1.629	mg/L	98	75	125			
L66691-11MSD	MSD	07/13/21 11:40	II210708-3	1.0008	.65	1.642	mg/L	99	75	125	1	20	
L66691-14DUP	DUP	07/13/21 11:55			.755	.898	mg/L				17	20	
WG523103													
WG523103ICV	ICV	07/13/21 21:33	II210712-1	2		1.889	mg/L	94	90	110			
WG523103ICB	ICB	07/13/21 21:36				U	mg/L		-0.15	0.15			
WG522746PBS	PBS	07/13/21 22:00				U	mg/L		-0.15	0.15			
WG522746LFB1	LFB	07/13/21 22:04	II210708-3	1.0008		.952	mg/L	95	80	120			
L66693-04DUP	DUP	07/13/21 22:11			.546	.495	mg/L				10	20	
L66693-05MS	MS	07/13/21 22:19	II210708-3	1.0008	.307	1.309	mg/L	100	75	125			
L66693-05MSD	MSD	07/13/21 22:22	II210708-3	1.0008	.307	1.327	mg/L	102	75	125	1	20	
WG523320													
WG523320ICV	ICV	07/15/21 22:25	II210712-1	2		1.917	mg/L	96	90	110			
WG523320ICB	ICB	07/15/21 22:28				U	mg/L		-0.15	0.15			
WG522974PBS	PBS	07/15/21 22:52				U	mg/L		-0.15	0.15			
WG522974LFB1	LFB	07/15/21 22:55	II210708-3	1.0008		1.025	mg/L	102	80	120			
L66693-01MS	MS	07/15/21 23:03	II210708-3	1.0008	.651	1.762	mg/L	111	75	125			
L66693-01MSD	MSD	07/15/21 23:06	II210708-3	1.0008	.651	1.739	mg/L	109	75	125	1	20	
L66732-17DUP	DUP	07/16/21 0:21			.23	.217	mg/L				6	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Aluminum, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523115													
WG523115ICV	ICV	07/13/21 23:22	II210712-1	2		1.942	mg/L	97	90	110			
WG523115ICB	ICB	07/13/21 23:26				U	mg/L		-0.15	0.15			
WG522934PBS	PBS	07/13/21 23:50				U	mg/Kg		-15	15			
WG522934LCSS	LCSS	07/13/21 23:53	PCN63584	8130		7695	mg/Kg		3920	12300			
WG522934LCSSD	LCSSD	07/13/21 23:57	PCN63584	8130		7882	mg/Kg		3920	12300	2	20	
L66693-01MS	MS	07/14/21 0:04	II210708-3	100.08	2760	5466	mg/Kg	2704	75	125			M3
L66693-01MSD	MSD	07/14/21 0:08	II210708-3	100.08	2760	5221	mg/Kg	2459	75	125	5	20	M3

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Antimony (1312)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.0201		.02021	mg/L	101	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0012	0.0012			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0012	0.0012			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.01		.00958	mg/L	96	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.01	U	.00977	mg/L	98	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.01	U	.00975	mg/L	98	75	125	0	20	
L66693-11DUP	DUP	07/09/21 16:50			U	U	mg/L				0	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.0201		.01924	mg/L	96	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0012	0.0012			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0012	0.0012			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.01		.0098	mg/L	98	80	120			
L66692-11DUP	DUP	07/12/21 17:50			U	U	mg/L				0	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.01	U	.01001	mg/L	100	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.01	U	.00982	mg/L	98	75	125	2	20	
WG523021													
WG523021ICV	ICV	07/12/21 20:00	MS210630-2	.0201		.01991	mg/L	99	90	110			
WG523021ICB	ICB	07/12/21 20:01				U	mg/L		-0.0012	0.0012			
WG522653PBS	PBS	07/12/21 20:11				U	mg/L		-0.0012	0.0012			
WG522653LFB2	LFB	07/12/21 20:13	MS210702-2	.01		.01021	mg/L	102	80	120			
L66691-12MS	MS	07/12/21 20:18	MS210702-2	.01	U	.01022	mg/L	102	75	125			
L66691-12MSD	MSD	07/12/21 20:20	MS210702-2	.01	U	.01019	mg/L	102	75	125	0	20	
L66691-14DUP	DUP	07/12/21 20:29			U	U	mg/L				0	20	RA
WG523066													
WG523066ICV	ICV	07/13/21 14:56	MS210630-2	.0201		.0201	mg/L	100	90	110			
WG523066ICB	ICB	07/13/21 14:58				U	mg/L		-0.0012	0.0012			
WG522746PBS	PBS	07/13/21 15:09				U	mg/L		-0.0012	0.0012			
WG522746LFB2	LFB	07/13/21 15:11	MS210702-2	.01		.00958	mg/L	96	80	120			
L66693-04DUP	DUP	07/13/21 15:14			U	U	mg/L				0	20	RA
L66731-09MS	MS	07/13/21 15:20	MS210702-2	.01	U	.00982	mg/L	98	75	125			
L66731-09MSD	MSD	07/13/21 15:25	MS210702-2	.01	U	.00974	mg/L	97	75	125	1	20	
WG523321													
WG523321ICV	ICV	07/15/21 15:18	MS210630-2	.0201		.02031	mg/L	101	90	110			
WG523321ICB	ICB	07/15/21 15:20				U	mg/L		-0.0012	0.0012			
WG522974PBS	PBS	07/15/21 15:29				U	mg/L		-0.0012	0.0012			
WG522974LFB2	LFB	07/15/21 15:31	MS210702-2	.01		.00961	mg/L	96	80	120			
L66693-02MS	MS	07/15/21 15:36	MS210702-2	.01	U	.00964	mg/L	96	75	125			
L66693-02MSD	MSD	07/15/21 15:38	MS210702-2	.01	U	.00964	mg/L	96	75	125	0	20	
L66732-17DUP	DUP	07/15/21 16:13			U	U	mg/L				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Antimony, total (3050)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523108													
WG523108ICV	ICV	07/13/21 20:21	MS210630-2	.0201		.02002	mg/L	100	90	110			
WG523108ICB	ICB	07/13/21 20:23				U	mg/L		-0.0012	0.0012			
WG522934PBS	PBS	07/13/21 20:32				U	mg/Kg		-0.6	0.6			
WG522934LCSS	LCSS	07/13/21 20:34	PCN63584	134		72.79814	mg/Kg		4.56	264			
WG522934LCSSD	LCSSD	07/13/21 20:36	PCN63584	134		72.58007	mg/Kg		4.56	264	0	20	
L66693-15MS	MS	07/13/21 21:15	MS210521-6	5	U	.91664	mg/Kg	18	75	125			M2
L66693-15MSD	MSD	07/13/21 21:17	MS210521-6	5	U	.92534	mg/Kg	19	75	125	1	20	M2

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Arsenic (1312)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.04945	mg/L	99	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0006	0.0006			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0006	0.0006			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05005		.04711	mg/L	94	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05005	.00069	.04731	mg/L	93	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05005	.00069	.048	mg/L	95	75	125	1	20	
L66693-11DUP	DUP	07/09/21 16:50			.00061	.00059	mg/L				3	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.04873	mg/L	97	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0006	0.0006			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0006	0.0006			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05005		.04626	mg/L	92	80	120			
L66692-11DUP	DUP	07/12/21 17:50			.00062	.00067	mg/L				8	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05005	.00076	.04857	mg/L	96	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05005	.00076	.0482	mg/L	95	75	125	1	20	
WG523021													
WG523021ICV	ICV	07/12/21 20:00	MS210630-2	.05		.04937	mg/L	99	90	110			
WG523021ICB	ICB	07/12/21 20:01				U	mg/L		-0.0006	0.0006			
WG522653PBS	PBS	07/12/21 20:11				U	mg/L		-0.0006	0.0006			
WG522653LFB2	LFB	07/12/21 20:13	MS210702-2	.05005		.05085	mg/L	102	80	120			
L66691-12MS	MS	07/12/21 20:18	MS210702-2	.05005	.00046	.0509	mg/L	101	75	125			
L66691-12MSD	MSD	07/12/21 20:20	MS210702-2	.05005	.00046	.0521	mg/L	103	75	125	2	20	
L66691-14DUP	DUP	07/12/21 20:29			.00052	.00046	mg/L				12	20	RA
WG523066													
WG523066ICV	ICV	07/13/21 14:56	MS210630-2	.05		.04995	mg/L	100	90	110			
WG523066ICB	ICB	07/13/21 14:58				U	mg/L		-0.0006	0.0006			
WG522746PBS	PBS	07/13/21 15:09				U	mg/L		-0.0006	0.0006			
WG522746LFB2	LFB	07/13/21 15:11	MS210702-2	.05005		.04876	mg/L	97	80	120			
L66693-04DUP	DUP	07/13/21 15:14			.0015	.00145	mg/L				3	20	RA
L66731-09MS	MS	07/13/21 15:20	MS210702-2	.05005	.00184	.05094	mg/L	98	75	125			
L66731-09MSD	MSD	07/13/21 15:25	MS210702-2	.05005	.00184	.05033	mg/L	97	75	125	1	20	
WG523321													
WG523321ICV	ICV	07/15/21 15:18	MS210630-2	.05		.05027	mg/L	101	90	110			
WG523321ICB	ICB	07/15/21 15:20				U	mg/L		-0.0006	0.0006			
WG522974PBS	PBS	07/15/21 15:29				U	mg/L		-0.0006	0.0006			
WG522974LFB2	LFB	07/15/21 15:31	MS210702-2	.05005		.04809	mg/L	96	80	120			
L66693-02MS	MS	07/15/21 15:36	MS210702-2	.05005	.00159	.04874	mg/L	94	75	125			
L66693-02MSD	MSD	07/15/21 15:38	MS210702-2	.05005	.00159	.04946	mg/L	96	75	125	1	20	
L66732-17DUP	DUP	07/15/21 16:13			.00041	.00041	mg/L				0	20	RA

Hudbay MineralsACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Arsenic, total (3050)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523108													
WG523108ICV	ICV	07/13/21 20:21	MS210630-2	.05		.04924	mg/L	98	90	110			
WG523108ICB	ICB	07/13/21 20:23				U	mg/L		-0.0006	0.0006			
WG522934PBS	PBS	07/13/21 20:32				U	mg/Kg		-0.3	0.3			
WG522934LCSS	LCSS	07/13/21 20:34	PCN63584	156		124.93438	mg/Kg		129	183			RL
WG522934LCSSD	LCSSD	07/13/21 20:36	PCN63584	156		134.21343	mg/Kg		129	183	7	20	
L66693-15MS	MS	07/13/21 21:15	MS210521-6	25.025	2.39	24.14133	mg/Kg	87	75	125			
L66693-15MSD	MSD	07/13/21 21:17	MS210521-6	25.025	2.39	24.43436	mg/Kg	88	75	125	1	20	

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Cadmium (1312)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.050499	mg/L	101	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.00015	0.00015			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.00015	0.00015			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05005		.04731	mg/L	95	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05005	U	.046723	mg/L	93	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05005	U	.046674	mg/L	93	75	125	0	20	
L66693-11DUP	DUP	07/09/21 16:50			U	U	mg/L				0	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.049226	mg/L	98	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.00015	0.00015			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.00015	0.00015			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05005		.047332	mg/L	95	80	120			
L66692-11DUP	DUP	07/12/21 17:50			U	U	mg/L				0	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05005	U	.04775	mg/L	95	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05005	U	.04685	mg/L	94	75	125	2	20	
WG523021													
WG523021ICV	ICV	07/12/21 20:00	MS210630-2	.05		.049376	mg/L	99	90	110			
WG523021ICB	ICB	07/12/21 20:01				U	mg/L		-0.00015	0.00015			
WG522653PBS	PBS	07/12/21 20:11				U	mg/L		-0.00015	0.00015			
WG522653LFB2	LFB	07/12/21 20:13	MS210702-2	.05005		.048451	mg/L	97	80	120			
L66691-12MS	MS	07/12/21 20:18	MS210702-2	.05005	U	.048611	mg/L	97	75	125			
L66691-12MSD	MSD	07/12/21 20:20	MS210702-2	.05005	U	.049231	mg/L	98	75	125	1	20	
L66691-14DUP	DUP	07/12/21 20:29			U	U	mg/L				0	20	RA
WG523066													
WG523066ICV	ICV	07/13/21 14:56	MS210630-2	.05		.049544	mg/L	99	90	110			
WG523066ICB	ICB	07/13/21 14:58				U	mg/L		-0.00015	0.00015			
WG522746PBS	PBS	07/13/21 15:09				U	mg/L		-0.00015	0.00015			
WG522746LFB2	LFB	07/13/21 15:11	MS210702-2	.05005		.046286	mg/L	92	80	120			
L66693-04DUP	DUP	07/13/21 15:14			U	U	mg/L				0	20	RA
L66731-09MS	MS	07/13/21 15:20	MS210702-2	.05005	U	.046177	mg/L	92	75	125			
L66731-09MSD	MSD	07/13/21 15:25	MS210702-2	.05005	U	.046195	mg/L	92	75	125	0	20	
WG523321													
WG523321ICV	ICV	07/15/21 15:18	MS210630-2	.05		.051174	mg/L	102	90	110			
WG523321ICB	ICB	07/15/21 15:20				U	mg/L		-0.00015	0.00015			
WG522974PBS	PBS	07/15/21 15:29				U	mg/L		-0.00015	0.00015			
WG522974LFB2	LFB	07/15/21 15:31	MS210702-2	.05005		.04661	mg/L	93	80	120			
L66693-02MS	MS	07/15/21 15:36	MS210702-2	.05005	U	.04671	mg/L	93	75	125			
L66693-02MSD	MSD	07/15/21 15:38	MS210702-2	.05005	U	.046757	mg/L	93	75	125	0	20	
L66732-17DUP	DUP	07/15/21 16:13			U	U	mg/L				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Cadmium, total (3050)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523108													
WG523108ICV	ICV	07/13/21 20:21	MS210630-2	.05		.049481	mg/L	99	90	110			
WG523108ICB	ICB	07/13/21 20:23				U	mg/L		-0.00015	0.00015			
WG522934PBS	PBS	07/13/21 20:32				U	mg/Kg		-0.075	0.075			
WG522934LCSS	LCSS	07/13/21 20:34	PCN63584	137		113.52380	mg/Kg		113	160			
WG522934LCSSD	LCSSD	07/13/21 20:36	PCN63584	137		113.14476	mg/Kg		113	160	0	20	
L66693-15MS	MS	07/13/21 21:15	MS210521-6	25.025	.301	21.368545	mg/Kg	84	75	125			
L66693-15MSD	MSD	07/13/21 21:17	MS210521-6	25.025	.301	21.184446	mg/Kg	83	75	125	1	20	

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Calcium (1312)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	100		102.7	mg/L	103	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.3	0.3			
WG522394PBS	PBS	07/07/21 22:58				.1	mg/L		-0.3	0.3			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	67.98753		71.43	mg/L	105	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	67.98753	13.5	85.44	mg/L	106	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	67.98753	13.5	84.62	mg/L	105	75	125	1	20	
L66693-11DUP	DUP	07/08/21 0:00			7.58	7.62	mg/L				1	20	
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	100		98.66	mg/L	99	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.3	0.3			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.3	0.3			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	67.98753		68.6	mg/L	101	80	120			
L66692-11DUP	DUP	07/12/21 18:36			10.9	11.38	mg/L				4	20	
L66692-12MS	MS	07/12/21 18:43	II210622-2	67.98753	11.2	79.94	mg/L	101	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	67.98753	11.2	80.02	mg/L	101	75	125	0	20	
WG523072													
WG523072ICV	ICV	07/13/21 10:56	II210712-1	100		99.72	mg/L	100	90	110			
WG523072ICB	ICB	07/13/21 11:00				U	mg/L		-0.3	0.3			
WG522653PBS	PBS	07/13/21 11:24				U	mg/L		-0.3	0.3			
WG522653LFB1	LFB	07/13/21 11:28	II210708-3	67.99734		69.5	mg/L	102	80	120			
L66691-11MS	MS	07/13/21 11:36	II210708-3	67.99734	1.67	69.32	mg/L	99	75	125			
L66691-11MSD	MSD	07/13/21 11:40	II210708-3	67.99734	1.67	69.96	mg/L	100	75	125	1	20	
L66691-14DUP	DUP	07/13/21 11:55			1.53	1.34	mg/L				13	20	
WG523103													
WG523103ICV	ICV	07/13/21 21:33	II210712-1	100		99.13	mg/L	99	90	110			
WG523103ICB	ICB	07/13/21 21:36				.19	mg/L		-0.3	0.3			
WG522746PBS	PBS	07/13/21 22:00				U	mg/L		-0.3	0.3			
WG522746LFB1	LFB	07/13/21 22:04	II210708-3	67.99734		68.99	mg/L	101	80	120			
L66693-04DUP	DUP	07/13/21 22:11			8.57	8.25	mg/L				4	20	
L66693-05MS	MS	07/13/21 22:19	II210708-3	67.99734	10.1	78.57	mg/L	101	75	125			
L66693-05MSD	MSD	07/13/21 22:22	II210708-3	67.99734	10.1	79.63	mg/L	102	75	125	1	20	
WG523284													
WG523284ICV	ICV	07/15/21 11:04	II210712-1	100		99.54	mg/L	100	90	110			
WG523284ICB	ICB	07/15/21 11:08				U	mg/L		-0.3	0.3			
WG522974PBS	PBS	07/15/21 11:32				U	mg/L		-0.3	0.3			
WG522974LFB1	LFB	07/15/21 11:36	II210708-3	67.99734		68.89	mg/L	101	80	120			
L66693-01MS	MS	07/15/21 11:44	II210708-3	67.99734	5.91	73.59	mg/L	100	75	125			
L66693-01MSD	MSD	07/15/21 11:48	II210708-3	67.99734	5.91	73.41	mg/L	99	75	125	0	20	
L66732-17DUP	DUP	07/15/21 13:06			7.75	8.34	mg/L				7	20	

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Calcium, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523115													
WG523115ICV	ICV	07/13/21 23:22	II210712-1	100		100.2	mg/L	100	90	110			
WG523115ICB	ICB	07/13/21 23:26				.23	mg/L		-0.3	0.3			
WG522934PBS	PBS	07/13/21 23:50				U	mg/Kg		-30	30			
WG522934LCSS	LCSS	07/13/21 23:53	PCN63584	4760		3997	mg/Kg		3890	5640			
WG522934LCSSD	LCSSD	07/13/21 23:57	PCN63584	4760		4145	mg/Kg		3890	5640	4	20	
L66693-01MS	MS	07/14/21 0:04	II210708-3	6799.734	2060	9218	mg/Kg	105	75	125			
L66693-01MSD	MSD	07/14/21 0:08	II210708-3	6799.734	2060	9749	mg/Kg	113	75	125	6	20	

WG523183

WG523183ICV	ICV	07/14/21 12:21	II210712-1	100		99.71	mg/L	100	90	110			
WG523183ICB	ICB	07/14/21 12:25				U	mg/L		-0.3	0.3			
WG522934PBS	PBS	07/14/21 12:49				U	mg/Kg		-30	30			
WG522934LCSS	LCSS	07/14/21 12:53	PCN63584	4760		4009	mg/Kg		3890	5640			
WG522934LCSSD	LCSSD	07/14/21 12:57	PCN63584	4760		4186	mg/Kg		3890	5640	4	20	
L66693-01MS	MS	07/14/21 13:05	II210708-3	6799.734	2090	9256	mg/Kg	105	75	125			
L66693-01MSD	MSD	07/14/21 13:08	II210708-3	6799.734	2090	9751	mg/Kg	113	75	125	5	20	

WG523282

WG523282ICV	ICV	07/15/21 13:39	II210712-1	100		99.3	mg/L	99	90	110			
WG523282ICB	ICB	07/15/21 13:43				U	mg/L		-0.3	0.3			
WG522934PBS	PBS	07/15/21 14:08				U	mg/Kg		-30	30			
WG522934LCSS	LCSS	07/15/21 14:14	PCN63584	4760		4089	mg/Kg		3890	5640			
WG522934LCSSD	LCSSD	07/15/21 14:18	PCN63584	4760		4250	mg/Kg		3890	5640	4	20	
L66693-01MS	MS	07/15/21 14:27	II210708-3	6799.734	2120	9343	mg/Kg	106	75	125			
L66693-01MSD	MSD	07/15/21 14:31	II210708-3	6799.734	2120	9870	mg/Kg	114	75	125	5	20	

Carbon, total (TC)

ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522173													
WG522173PBS	PBS	07/06/21 8:30				U	%		-0.3	0.3			
WG522173LCSS	LCSS	07/06/21 8:42	PCN61786	4.35		4.4	%	101	80	120			
L66693-01DUP	DUP	07/06/21 9:08			.2	.2	%				0	20	RA

Carbon, total inorganic (TIC)

ASA No. 9 29-2.2.4 (calc TC - TOC)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522173													
WG522173PBS	PBS	07/06/21 8:30				U	%		-0.3	0.3			
L66693-01DUP	DUP	07/06/21 9:08			U	U	%				0	20	RA

Carbon, total organic (TOC)

ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522173													
WG522173PBS	PBS	07/06/21 8:30				U	%		-0.3	0.3			
L66693-01DUP	DUP	07/06/21 9:08			.2	.2	%				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Conductivity @25C

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523351													
L66693-01DUP	DUP	07/15/21 16:48			.152	.1387	mmhos/cm				9	20	

Copper (1312)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.05117	mg/L	102	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0024	0.0024			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0024	0.0024			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05		.04852	mg/L	97	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05	.0779	.1247	mg/L	94	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05	.0779	.1262	mg/L	97	75	125	1	20	
L66693-11DUP	DUP	07/09/21 16:50			.00124	.00164	mg/L				28	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.04823	mg/L	96	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0024	0.0024			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0024	0.0024			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05		.04672	mg/L	93	80	120			
L66692-11DUP	DUP	07/12/21 17:50			.0202	.02071	mg/L				2	20	
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05	.0266	.07402	mg/L	95	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05	.0266	.07175	mg/L	90	75	125	3	20	
WG523021													
WG523021ICV	ICV	07/12/21 20:00	MS210630-2	.05		.05046	mg/L	101	90	110			
WG523021ICB	ICB	07/12/21 20:01				U	mg/L		-0.0024	0.0024			
WG522653PBS	PBS	07/12/21 20:11				U	mg/L		-0.0024	0.0024			
WG522653LFB2	LFB	07/12/21 20:13	MS210702-2	.05		.05105	mg/L	102	80	120			
L66691-12MS	MS	07/12/21 20:18	MS210702-2	.05	.00596	.05551	mg/L	99	75	125			
L66691-12MSD	MSD	07/12/21 20:20	MS210702-2	.05	.00596	.05699	mg/L	102	75	125	3	20	
L66691-14DUP	DUP	07/12/21 20:29			.00382	.00319	mg/L				18	20	RA
WG523066													
WG523066ICV	ICV	07/13/21 14:56	MS210630-2	.05		.05173	mg/L	103	90	110			
WG523066ICB	ICB	07/13/21 14:58				U	mg/L		-0.0024	0.0024			
WG522746PBS	PBS	07/13/21 15:09				U	mg/L		-0.0024	0.0024			
WG522746LFB2	LFB	07/13/21 15:11	MS210702-2	.05		.04929	mg/L	99	80	120			
L66693-04DUP	DUP	07/13/21 15:14			.00511	.00445	mg/L				14	20	RA
L66731-09MS	MS	07/13/21 15:20	MS210702-2	.05	.0385	.0893	mg/L	102	75	125			
L66731-09MSD	MSD	07/13/21 15:25	MS210702-2	.05	.0385	.08839	mg/L	100	75	125	1	20	
WG523321													
WG523321ICV	ICV	07/15/21 15:18	MS210630-2	.05		.05151	mg/L	103	90	110			
WG523321ICB	ICB	07/15/21 15:20				U	mg/L		-0.0024	0.0024			
WG522974PBS	PBS	07/15/21 15:29				U	mg/L		-0.0024	0.0024			
WG522974LFB2	LFB	07/15/21 15:31	MS210702-2	.05		.04848	mg/L	97	80	120			
L66693-02MS	MS	07/15/21 15:36	MS210702-2	.05	.00602	.05289	mg/L	94	75	125			
L66693-02MSD	MSD	07/15/21 15:38	MS210702-2	.05	.00602	.05366	mg/L	95	75	125	1	20	
L66732-17DUP	DUP	07/15/21 16:13			.01	.01068	mg/L				7	20	

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Copper, total (3050)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523108													
WG523108ICV	ICV	07/13/21 20:21	MS210630-2	.05		.05073	mg/L	101	90	110			
WG523108ICB	ICB	07/13/21 20:23				U	mg/L		-0.0024	0.0024			
WG522934PBS	PBS	07/13/21 20:32				U	mg/Kg		-1.2	1.2			
WG522934LCSS	LCSS	07/13/21 20:34	PCN63584	54.9		43.85191	mg/Kg		46.1	63.6			RL
WG522934LCSSD	LCSSD	07/13/21 20:36	PCN63584	54.9		46.90257	mg/Kg		46.1	63.6	7	20	
L66693-15MS	MS	07/13/21 21:15	MS210521-6	25	103	237.74048	mg/Kg	539	75	125			M3
L66693-15MSD	MSD	07/13/21 21:17	MS210521-6	25	103	112.5881	mg/Kg	38	75	125	71	20	M3 RD

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Iron (1312)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	2		2.034	mg/L	102	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.18	0.18			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.18	0.18			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	1.0018		1.075	mg/L	107	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	1.0018	.085	1.146	mg/L	106	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	1.0018	.085	1.145	mg/L	106	75	125	0	20	
L66693-11DUP	DUP	07/08/21 0:00			U	U	mg/L				0	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	2		1.952	mg/L	98	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.18	0.18			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.18	0.18			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	1.0018		.995	mg/L	99	80	120			
L66692-11DUP	DUP	07/12/21 18:36			.149	.11	mg/L				30	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	1.0018	.174	1.194	mg/L	102	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	1.0018	.174	1.203	mg/L	103	75	125	1	20	
WG523072													
WG523072ICV	ICV	07/13/21 10:56	II210712-1	2		1.962	mg/L	98	90	110			
WG523072ICB	ICB	07/13/21 11:00				U	mg/L		-0.18	0.18			
WG522653PBS	PBS	07/13/21 11:24				U	mg/L		-0.18	0.18			
WG522653LFB1	LFB	07/13/21 11:28	II210708-3	1.0001		1.036	mg/L	104	80	120			
L66691-11MS	MS	07/13/21 11:36	II210708-3	1.0001	.417	1.367	mg/L	95	75	125			
L66691-11MSD	MSD	07/13/21 11:40	II210708-3	1.0001	.417	1.374	mg/L	96	75	125	1	20	
L66691-14DUP	DUP	07/13/21 11:55			.437	.513	mg/L				16	20	RA
WG523103													
WG523103ICV	ICV	07/13/21 21:33	II210712-1	2		1.954	mg/L	98	90	110			
WG523103ICB	ICB	07/13/21 21:36				U	mg/L		-0.18	0.18			
WG522746PBS	PBS	07/13/21 22:00				U	mg/L		-0.18	0.18			
WG522746LFB1	LFB	07/13/21 22:04	II210708-3	1.0001		1.001	mg/L	100	80	120			
L66693-04DUP	DUP	07/13/21 22:11			.175	.149	mg/L				16	20	RA
L66693-05MS	MS	07/13/21 22:19	II210708-3	1.0001	.071	1.081	mg/L	101	75	125			
L66693-05MSD	MSD	07/13/21 22:22	II210708-3	1.0001	.071	1.087	mg/L	102	75	125	1	20	
WG523284													
WG523284ICV	ICV	07/15/21 11:04	II210712-1	2		1.961	mg/L	98	90	110			
WG523284ICB	ICB	07/15/21 11:08				U	mg/L		-0.18	0.18			
WG522974PBS	PBS	07/15/21 11:32				U	mg/L		-0.18	0.18			
WG522974LFB1	LFB	07/15/21 11:36	II210708-3	1.0001		1	mg/L	100	80	120			
L66693-01MS	MS	07/15/21 11:44	II210708-3	1.0001	.299	1.277	mg/L	98	75	125			
L66693-01MSD	MSD	07/15/21 11:48	II210708-3	1.0001	.299	1.279	mg/L	98	75	125	0	20	
L66732-17DUP	DUP	07/15/21 13:06			U	U	mg/L				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Iron, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523115													
WG523115ICV	ICV	07/13/21 23:22	II210712-1	2		1.999	mg/L	100	90	110			
WG523115ICB	ICB	07/13/21 23:26				U	mg/L		-0.18	0.18			
WG522934PBS	PBS	07/13/21 23:50				U	mg/Kg		-18	18			
WG522934LCSS	LCSS	07/13/21 23:53	PCN63584	14100		12540	mg/Kg		8470	19700			
WG522934LCSSD	LCSSD	07/13/21 23:57	PCN63584	14100		13150	mg/Kg		8470	19700	5	20	
L66693-01MS	MS	07/14/21 0:04	II210708-3	100.01	4710	5708	mg/Kg	998	75	125			M3
L66693-01MSD	MSD	07/14/21 0:08	II210708-3	100.01	4710	5165	mg/Kg	455	75	125	10	20	M3
WG523183													
WG523183ICV	ICV	07/14/21 12:21	II210712-1	2		1.986	mg/L	99	90	110			
WG523183ICB	ICB	07/14/21 12:25				U	mg/L		-0.18	0.18			
WG522934PBS	PBS	07/14/21 12:49				U	mg/Kg		-18	18			
WG522934LCSS	LCSS	07/14/21 12:53	PCN63584	14100		12840	mg/Kg		8470	19700			
WG522934LCSSD	LCSSD	07/14/21 12:57	PCN63584	14100		13530	mg/Kg		8470	19700	5	20	
L66693-01MS	MS	07/14/21 13:05	II210708-3	100.01	4850	5843	mg/Kg	993	75	125			M3
L66693-01MSD	MSD	07/14/21 13:08	II210708-3	100.01	4850	5282	mg/Kg	432	75	125	10	20	M3

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Lead (1312)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.05017	mg/L	100	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0003	0.0003			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0003	0.0003			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05005		.04729	mg/L	94	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05005	.00263	.04957	mg/L	94	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05005	.00263	.04978	mg/L	94	75	125	0	20	
L66693-11DUP	DUP	07/09/21 16:50			U	U	mg/L				0	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.05049	mg/L	101	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0003	0.0003			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0003	0.0003			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05005		.049	mg/L	98	80	120			
L66692-11DUP	DUP	07/12/21 17:50			.00083	.00069	mg/L				18	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05005	.00046	.05058	mg/L	100	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05005	.00046	.04956	mg/L	98	75	125	2	20	
WG523021													
WG523021ICV	ICV	07/12/21 20:00	MS210630-2	.05		.04961	mg/L	99	90	110			
WG523021ICB	ICB	07/12/21 20:01				U	mg/L		-0.0003	0.0003			
WG522653PBS	PBS	07/12/21 20:11				U	mg/L		-0.0003	0.0003			
WG522653LFB2	LFB	07/12/21 20:13	MS210702-2	.05005		.04957	mg/L	99	80	120			
L66691-12MS	MS	07/12/21 20:18	MS210702-2	.05005	.00056	.05016	mg/L	99	75	125			
L66691-12MSD	MSD	07/12/21 20:20	MS210702-2	.05005	.00056	.05069	mg/L	100	75	125	1	20	
L66691-14DUP	DUP	07/12/21 20:29			.00121	.00088	mg/L				32	20	RD
WG523066													
WG523066ICV	ICV	07/13/21 14:56	MS210630-2	.05		.04964	mg/L	99	90	110			
WG523066ICB	ICB	07/13/21 14:58				U	mg/L		-0.0003	0.0003			
WG522746PBS	PBS	07/13/21 15:09				U	mg/L		-0.0003	0.0003			
WG522746LFB2	LFB	07/13/21 15:11	MS210702-2	.05005		.04722	mg/L	94	80	120			
L66693-04DUP	DUP	07/13/21 15:14			.00027	.00023	mg/L				16	20	RA
L66731-09MS	MS	07/13/21 15:20	MS210702-2	.05005	.00015	.04748	mg/L	95	75	125			
L66731-09MSD	MSD	07/13/21 15:25	MS210702-2	.05005	.00015	.04755	mg/L	95	75	125	0	20	
WG523321													
WG523321ICV	ICV	07/15/21 15:18	MS210630-2	.05		.05055	mg/L	101	90	110			
WG523321ICB	ICB	07/15/21 15:20				U	mg/L		-0.0003	0.0003			
WG522974PBS	PBS	07/15/21 15:29				U	mg/L		-0.0003	0.0003			
WG522974LFB2	LFB	07/15/21 15:31	MS210702-2	.05005		.04643	mg/L	93	80	120			
L66693-02MS	MS	07/15/21 15:36	MS210702-2	.05005	.00037	.04751	mg/L	94	75	125			
L66693-02MSD	MSD	07/15/21 15:38	MS210702-2	.05005	.00037	.04717	mg/L	94	75	125	1	20	
L66732-17DUP	DUP	07/15/21 16:13			.00012	.0002	mg/L				50	20	RA

Hudbay MineralsACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Lead, total (3050)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523108													
WG523108ICV	ICV	07/13/21 20:21	MS210630-2	.05		.04908	mg/L	98	90	110			
WG523108ICB	ICB	07/13/21 20:23				U	mg/L		-0.0003	0.0003			
WG522934PBS	PBS	07/13/21 20:32				U	mg/Kg		-0.15	0.15			
WG522934LCSS	LCSS	07/13/21 20:34	PCN63584	130		105.26743	mg/Kg		107	152			RL
WG522934LCSSD	LCSSD	07/13/21 20:36	PCN63584	130		111.65398	mg/Kg		107	152	6	20	
L66693-15MS	MS	07/13/21 21:15	MS210521-6	25.025	11.5	32.46172	mg/Kg	84	75	125			
L66693-15MSD	MSD	07/13/21 21:17	MS210521-6	25.025	11.5	32.40593	mg/Kg	84	75	125	0	20	

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Magnesium (1312)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	100		99.59	mg/L	100	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.6	0.6			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.6	0.6			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	50.00302		50.31	mg/L	101	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	50.00302	.65	50.82	mg/L	100	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	50.00302	.65	50.58	mg/L	100	75	125	0	20	
L66693-11DUP	DUP	07/08/21 0:00			.59	.56	mg/L				5	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	100		95.04	mg/L	95	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.6	0.6			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.6	0.6			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	50.00302		48.37	mg/L	97	80	120			
L66692-11DUP	DUP	07/12/21 18:36			.65	.68	mg/L				5	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	50.00302	.58	48.86	mg/L	97	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	50.00302	.58	48.85	mg/L	97	75	125	0	20	
WG523072													
WG523072ICV	ICV	07/13/21 10:56	II210712-1	100		96.67	mg/L	97	90	110			
WG523072ICB	ICB	07/13/21 11:00				U	mg/L		-0.6	0.6			
WG522653PBS	PBS	07/13/21 11:24				U	mg/L		-0.6	0.6			
WG522653LFB1	LFB	07/13/21 11:28	II210708-3	50.00074		49.16	mg/L	98	80	120			
L66691-11MS	MS	07/13/21 11:36	II210708-3	50.00074	.21	48.21	mg/L	96	75	125			
L66691-11MSD	MSD	07/13/21 11:40	II210708-3	50.00074	.21	48.55	mg/L	97	75	125	1	20	
L66691-14DUP	DUP	07/13/21 11:55			.25	.23	mg/L				8	20	RA
WG523103													
WG523103ICV	ICV	07/13/21 21:33	II210712-1	100		96.5	mg/L	97	90	110			
WG523103ICB	ICB	07/13/21 21:36				U	mg/L		-0.6	0.6			
WG522746PBS	PBS	07/13/21 22:00				U	mg/L		-0.6	0.6			
WG522746LFB1	LFB	07/13/21 22:04	II210708-3	50.00074		48.95	mg/L	98	80	120			
L66693-04DUP	DUP	07/13/21 22:11			.44	.28	mg/L				44	20	RA
L66693-05MS	MS	07/13/21 22:19	II210708-3	50.00074	.39	48.65	mg/L	97	75	125			
L66693-05MSD	MSD	07/13/21 22:22	II210708-3	50.00074	.39	49.52	mg/L	98	75	125	2	20	
WG523284													
WG523284ICV	ICV	07/15/21 11:04	II210712-1	100		96.61	mg/L	97	90	110			
WG523284ICB	ICB	07/15/21 11:08				U	mg/L		-0.6	0.6			
WG522974PBS	PBS	07/15/21 11:32				U	mg/L		-0.6	0.6			
WG522974LFB1	LFB	07/15/21 11:36	II210708-3	50.00074		48.92	mg/L	98	80	120			
L66693-01MS	MS	07/15/21 11:44	II210708-3	50.00074	.3	48.5	mg/L	96	75	125			
L66693-01MSD	MSD	07/15/21 11:48	II210708-3	50.00074	.3	48.2	mg/L	96	75	125	1	20	
L66732-17DUP	DUP	07/15/21 13:06			.23	.28	mg/L				20	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Magnesium, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523115													
WG523115ICV	ICV	07/13/21 23:22	II210712-1	100		97.28	mg/L	97	90	110			
WG523115ICB	ICB	07/13/21 23:26				.24	mg/L		-0.6	0.6			
WG522934PBS	PBS	07/13/21 23:50				U	mg/Kg		-60	60			
WG522934LCSS	LCSS	07/13/21 23:53	PCN63584	2320		2006	mg/Kg		1760	2880			
WG522934LCSSD	LCSSD	07/13/21 23:57	PCN63584	2320		2075	mg/Kg		1760	2880	3	20	
L66693-01MS	MS	07/14/21 0:04	II210708-3	5000.074	655	5330	mg/Kg	93	75	125			
L66693-01MSD	MSD	07/14/21 0:08	II210708-3	5000.074	655	5268	mg/Kg	92	75	125	1	20	

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Manganese (1312)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	2		2.009	mg/L	100	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.03	0.03			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.03	0.03			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	.5005		.51	mg/L	102	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	.5005	U	.51	mg/L	102	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	.5005	U	.508	mg/L	101	75	125	0	20	
L66693-11DUP	DUP	07/08/21 0:00			U	U	mg/L				0	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	2		1.931	mg/L	97	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.03	0.03			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.03	0.03			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	.5005		.488	mg/L	98	80	120			
L66692-11DUP	DUP	07/12/21 18:36			U	U	mg/L				0	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	.5005	.012	.502	mg/L	98	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	.5005	.012	.505	mg/L	99	75	125	1	20	
WG523072													
WG523072ICV	ICV	07/13/21 10:56	II210712-1	2		1.941	mg/L	97	90	110			
WG523072ICB	ICB	07/13/21 11:00				U	mg/L		-0.03	0.03			
WG522653PBS	PBS	07/13/21 11:24				U	mg/L		-0.03	0.03			
WG522653LFB1	LFB	07/13/21 11:28	II210708-3	.5005		.508	mg/L	101	80	120			
L66691-11MS	MS	07/13/21 11:36	II210708-3	.5005	.012	.5	mg/L	98	75	125			
L66691-11MSD	MSD	07/13/21 11:40	II210708-3	.5005	.012	.505	mg/L	99	75	125	1	20	
L66691-14DUP	DUP	07/13/21 11:55			.013	.014	mg/L				7	20	RA
WG523103													
WG523103ICV	ICV	07/13/21 21:33	II210712-1	2		1.93	mg/L	97	90	110			
WG523103ICB	ICB	07/13/21 21:36				U	mg/L		-0.03	0.03			
WG522746PBS	PBS	07/13/21 22:00				U	mg/L		-0.03	0.03			
WG522746LFB1	LFB	07/13/21 22:04	II210708-3	.5005		.494	mg/L	99	80	120			
L66693-04DUP	DUP	07/13/21 22:11			U	U	mg/L				0	20	RA
L66693-05MS	MS	07/13/21 22:19	II210708-3	.5005	U	.495	mg/L	99	75	125			
L66693-05MSD	MSD	07/13/21 22:22	II210708-3	.5005	U	.502	mg/L	100	75	125	1	20	
WG523284													
WG523284ICV	ICV	07/15/21 11:04	II210712-1	2		1.935	mg/L	97	90	110			
WG523284ICB	ICB	07/15/21 11:08				U	mg/L		-0.03	0.03			
WG522974PBS	PBS	07/15/21 11:32				U	mg/L		-0.03	0.03			
WG522974LFB1	LFB	07/15/21 11:36	II210708-3	.5005		.494	mg/L	99	80	120			
L66693-01MS	MS	07/15/21 11:44	II210708-3	.5005	U	.494	mg/L	99	75	125			
L66693-01MSD	MSD	07/15/21 11:48	II210708-3	.5005	U	.495	mg/L	99	75	125	0	20	
L66732-17DUP	DUP	07/15/21 13:06			U	U	mg/L				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Manganese, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523115													
WG523115ICV	ICV	07/13/21 23:22	II210712-1	2		1.963	mg/L	98	90	110			
WG523115ICB	ICB	07/13/21 23:26				U	mg/L		-0.03	0.03			
WG522934PBS	PBS	07/13/21 23:50				U	mg/Kg		-3	3			
WG522934LCSS	LCSS	07/13/21 23:53	PCN63584	269		236.5	mg/Kg		221	317			
WG522934LCSSD	LCSSD	07/13/21 23:57	PCN63584	269		245.8	mg/Kg		221	317	4	20	
L66693-01MS	MS	07/14/21 0:04	II210708-3	50.05	162	203	mg/Kg	82	75	125			
L66693-01MSD	MSD	07/14/21 0:08	II210708-3	50.05	162	187.1	mg/Kg	50	75	125	8	20	M3

Mercury (1312)

M7470A CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523039													
WG523039ICV1	ICV	07/14/21 9:56	HG210701-3	.00501		.00497	mg/L	99	95	105			
WG523039ICB	ICB	07/14/21 9:57				U	mg/L		-0.0002	0.0002			
WG523161													
WG523161LFB	LFB	07/14/21 13:46	HG210709-9	.002002		.00188	mg/L	94	85	115			
WG522394PBS	PBS	07/14/21 13:47				U	mg/L		-0.0006	0.0006			
WG522394LFB1	LFB	07/14/21 13:48	HG210709-9	.002002		.00192	mg/L	96	85	115			
L66692-04MS	MS	07/14/21 13:50	HG210709-9	.002002	U	.00189	mg/L	94	85	115			
L66692-04MSD	MSD	07/14/21 13:51	HG210709-9	.002002	U	.00199	mg/L	99	85	115	5	20	
L66693-11DUP	DUP	07/14/21 15:35			U	U	mg/L				0	20	RA
WG523163													
WG523163LFB	LFB	07/14/21 14:12	HG210709-9	.002002		.00182	mg/L	91	85	115			
WG522746PBS	PBS	07/14/21 14:13				U	mg/L		-0.0006	0.0006			
WG522746LFB1	LFB	07/14/21 14:14	HG210709-9	.002002		.00191	mg/L	95	85	115			
L66693-04DUP	DUP	07/14/21 14:16			U	U	mg/L				0	20	RA
L66693-05MS	MS	07/14/21 14:18	HG210709-9	.002002	U	.002	mg/L	100	85	115			
L66693-05MSD	MSD	07/14/21 14:19	HG210709-9	.002002	U	.0022	mg/L	110	85	115	10	20	
WG523165													
WG523165LFB	LFB	07/14/21 14:32	HG210709-9	.002002		.00179	mg/L	89	85	115			
WG522974PBS	PBS	07/14/21 14:33				U	mg/L		-0.0006	0.0006			
WG522974LFB1	LFB	07/14/21 14:34	HG210709-9	.002002		.00176	mg/L	88	85	115			
L66693-01MS	MS	07/14/21 14:36	HG210709-9	.002002	U	.00173	mg/L	86	85	115			
L66693-01MSD	MSD	07/14/21 14:37	HG210709-9	.002002	U	.00181	mg/L	90	85	115	5	20	
L66732-17DUP	DUP	07/14/21 14:55			U	U	mg/L				0	20	RA
WG523162													
WG523162LFB	LFB	07/14/21 15:01	HG210709-9	.002002		.00176	mg/L	88	85	115			
WG522409PBS	PBS	07/14/21 15:02				U	mg/L		-0.0006	0.0006			
WG522409LFB1	LFB	07/14/21 15:03	HG210709-9	.002002		.00185	mg/L	92	85	115			
L66692-11DUP	DUP	07/14/21 15:05			U	U	mg/L				0	20	RA
L66692-12MS	MS	07/14/21 15:07	HG210709-9	.002002	U	.00176	mg/L	88	85	115			
L66692-12MSD	MSD	07/14/21 15:08	HG210709-9	.002002	U	.00184	mg/L	92	85	115	4	20	
WG522653LFB1	LFB	07/14/21 15:16	HG210709-9	.002002		.0017	mg/L	85	85	115			
WG522653PBS	PBS	07/14/21 15:17				U	mg/L		-0.0006	0.0006			
L66691-11MS	MS	07/14/21 15:19	HG210709-9	.002002	U	.00194	mg/L	97	85	115			
L66691-11MSD	MSD	07/14/21 15:20	HG210709-9	.002002	U	.00194	mg/L	97	85	115	0	20	
L66691-14DUP	DUP	07/14/21 15:24			U	U	mg/L				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Mercury by Direct Combustion AA M7473 CVAAS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG520390													
WG520390ICV4	ICV	06/04/21 12:43	HG210603-2	10000		10200	ng/g	102	90	110			
WG522321													
WG522321ICV1	ICV	07/01/21 10:22	HG210603-4	100		105	ng/g	105	90	110			
WG522321ICV3	ICV	07/01/21 10:36	HG210603-3	1000		1010	ng/g	101	90	110			
WG522321ICV2	ICV	07/01/21 10:59	HG210603-4	100		90.3	ng/g	90	90	110			
WG522321ICV4	ICV	07/01/21 11:29	HG210603-2	10000		10300	ng/g	103	90	110			
WG522321PBS	PBS	07/01/21 11:47				U	ng/g		-4.71	4.71			
WG522321LCSS	LCSS	07/01/21 11:56	PCN60050	90		80.4	ng/g		80	120			
WG522321LCSSD	LCSSD	07/01/21 12:05	PCN60050	90		87.3	ng/g		80	120	8	20	
L66692-01MS	MS	07/01/21 12:22	HG210603-3				ng/g	85	80	120			
L66692-02DUP	DUP	07/01/21 12:39			13.1	13	ng/g				1	20	RA
WG522547													
WG522547ICV1	ICV	07/06/21 10:51	HG210603-4	100		100	ng/g	100	90	110			
WG522547ICV2	ICV	07/06/21 10:58	HG210603-4	100		100	ng/g	100	90	110			
WG522547ICV3	ICV	07/06/21 11:05	HG210603-3	1000		1010	ng/g	101	90	110			
WG522547ICV4	ICV	07/06/21 11:12	HG210603-2	10000		10400	ng/g	104	90	110			
WG522547PBS	PBS	07/06/21 11:29				U	ng/g		-4.47	4.47			
WG522547LCSS	LCSS	07/06/21 11:38	PCN60050	90		78.5	ng/g		80	120			
WG522547LCSSD	LCSSD	07/06/21 11:46	PCN60050	90		81.6	ng/g		80	120	4	20	
L66585-01DUP	DUP	07/06/21 12:04			269	U	ng/g				200	20	RA
L66693-01MS	MS	07/06/21 12:39	HG210603-3				ng/g	93	80	120			
L66693-02DUP	DUP	07/06/21 13:04			3.97	3.67	ng/g				8	20	

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Molybdenum (1312)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	2		2.077	mg/L	104	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.06	0.06			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.06	0.06			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	.501		.511	mg/L	102	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	.501	U	.517	mg/L	103	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	.501	U	.512	mg/L	102	75	125	1	20	
L66693-11DUP	DUP	07/08/21 0:00			U	U	mg/L				0	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	2		1.983	mg/L	99	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.06	0.06			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.06	0.06			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	.501		.502	mg/L	100	80	120			
L66692-11DUP	DUP	07/12/21 18:36			U	U	mg/L				0	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	.501	U	.499	mg/L	100	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	.501	U	.505	mg/L	101	75	125	1	20	
WG523072													
WG523072ICV	ICV	07/13/21 10:56	II210712-1	2		2	mg/L	100	90	110			
WG523072ICB	ICB	07/13/21 11:00				U	mg/L		-0.06	0.06			
WG522653PBS	PBS	07/13/21 11:24				U	mg/L		-0.06	0.06			
WG522653LFB1	LFB	07/13/21 11:28	II210708-3	.501		.505	mg/L	101	80	120			
L66691-11MS	MS	07/13/21 11:36	II210708-3	.501	U	.495	mg/L	99	75	125			
L66691-11MSD	MSD	07/13/21 11:40	II210708-3	.501	U	.496	mg/L	99	75	125	0	20	
L66691-14DUP	DUP	07/13/21 11:55			U	U	mg/L				0	20	RA
WG523103													
WG523103ICV	ICV	07/13/21 21:33	II210712-1	2		1.974	mg/L	99	90	110			
WG523103ICB	ICB	07/13/21 21:36				U	mg/L		-0.06	0.06			
WG522746PBS	PBS	07/13/21 22:00				U	mg/L		-0.06	0.06			
WG522746LFB1	LFB	07/13/21 22:04	II210708-3	.501		.5	mg/L	100	80	120			
L66693-04DUP	DUP	07/13/21 22:11			U	U	mg/L				0	20	RA
L66693-05MS	MS	07/13/21 22:19	II210708-3	.501	U	.49	mg/L	98	75	125			
L66693-05MSD	MSD	07/13/21 22:22	II210708-3	.501	U	.5	mg/L	100	75	125	2	20	
WG523284													
WG523284ICV	ICV	07/15/21 11:04	II210712-1	2		1.995	mg/L	100	90	110			
WG523284ICB	ICB	07/15/21 11:08				U	mg/L		-0.06	0.06			
WG522974PBS	PBS	07/15/21 11:32				U	mg/L		-0.06	0.06			
WG522974LFB1	LFB	07/15/21 11:36	II210708-3	.501		.494	mg/L	99	80	120			
L66693-01MS	MS	07/15/21 11:44	II210708-3	.501	U	.492	mg/L	98	75	125			
L66693-01MSD	MSD	07/15/21 11:48	II210708-3	.501	U	.484	mg/L	97	75	125	2	20	
L66732-17DUP	DUP	07/15/21 13:06			U	U	mg/L				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Molybdenum, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523115													
WG523115ICV	ICV	07/13/21 23:22	II210712-1	2		2.008	mg/L	100	90	110			
WG523115ICB	ICB	07/13/21 23:26				U	mg/L		-0.06	0.06			
WG522934PBS	PBS	07/13/21 23:50				U	mg/Kg		-6	6			
WG522934LCSS	LCSS	07/13/21 23:53	PCN63584	95.4		81.81	mg/Kg		76.4	114			
WG522934LCSSD	LCSSD	07/13/21 23:57	PCN63584	95.4		84.7	mg/Kg		76.4	114	3	20	
L66693-01MS	MS	07/14/21 0:04	II210708-3	50.1	U	47.93	mg/Kg	96	75	125			
L66693-01MSD	MSD	07/14/21 0:08	II210708-3	50.1	U	47.91	mg/Kg	96	75	125	0	20	

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Nickel (1312)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.05124	mg/L	102	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0012	0.0012			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0012	0.0012			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05		.04765	mg/L	95	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05	U	.04671	mg/L	93	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05	U	.04761	mg/L	95	75	125	2	20	
L66693-11DUP	DUP	07/09/21 16:50			U	.00371	mg/L				200	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.04903	mg/L	98	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0012	0.0012			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0012	0.0012			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05		.0459	mg/L	92	80	120			
L66692-11DUP	DUP	07/12/21 17:50			U	.00044	mg/L				200	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05	.00066	.04753	mg/L	94	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05	.00066	.04648	mg/L	92	75	125	2	20	
WG523021													
WG523021ICV	ICV	07/12/21 20:00	MS210630-2	.05		.05007	mg/L	100	90	110			
WG523021ICB	ICB	07/12/21 20:01				U	mg/L		-0.0012	0.0012			
WG522653PBS	PBS	07/12/21 20:11				U	mg/L		-0.0012	0.0012			
WG522653LFB2	LFB	07/12/21 20:13	MS210702-2	.05		.05044	mg/L	101	80	120			
L66691-12MS	MS	07/12/21 20:18	MS210702-2	.05	.00044	.04967	mg/L	98	75	125			
L66691-12MSD	MSD	07/12/21 20:20	MS210702-2	.05	.00044	.0505	mg/L	100	75	125	2	20	
L66691-14DUP	DUP	07/12/21 20:29			.00058	.00057	mg/L				2	20	RA
WG523066													
WG523066ICV	ICV	07/13/21 14:56	MS210630-2	.05		.05098	mg/L	102	90	110			
WG523066ICB	ICB	07/13/21 14:58				U	mg/L		-0.0012	0.0012			
WG522746PBS	PBS	07/13/21 15:09				U	mg/L		-0.0012	0.0012			
WG522746LFB2	LFB	07/13/21 15:11	MS210702-2	.05		.04811	mg/L	96	80	120			
L66693-04DUP	DUP	07/13/21 15:14			U	U	mg/L				0	20	RA
L66731-09MS	MS	07/13/21 15:20	MS210702-2	.05	.00059	.04869	mg/L	96	75	125			
L66731-09MSD	MSD	07/13/21 15:25	MS210702-2	.05	.00059	.0483	mg/L	95	75	125	1	20	
WG523321													
WG523321ICV	ICV	07/15/21 15:18	MS210630-2	.05		.05151	mg/L	103	90	110			
WG523321ICB	ICB	07/15/21 15:20				U	mg/L		-0.0012	0.0012			
WG522974PBS	PBS	07/15/21 15:29				U	mg/L		-0.0012	0.0012			
WG522974LFB2	LFB	07/15/21 15:31	MS210702-2	.05		.04807	mg/L	96	80	120			
L66693-02MS	MS	07/15/21 15:36	MS210702-2	.05	.00047	.04781	mg/L	95	75	125			
L66693-02MSD	MSD	07/15/21 15:38	MS210702-2	.05	.00047	.0476	mg/L	94	75	125	0	20	
L66732-17DUP	DUP	07/15/21 16:13			U	U	mg/L				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Nickel, total (3050)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523108													
WG523108ICV	ICV	07/13/21 20:21	MS210630-2	.05		.05016	mg/L	100	90	110			
WG523108ICB	ICB	07/13/21 20:23				U	mg/L		-0.0012	0.0012			
WG522934PBS	PBS	07/13/21 20:32				U	mg/Kg		-0.6	0.6			
WG522934LCSS	LCSS	07/13/21 20:34	PCN63584	53.9		45.01177	mg/Kg		44.5	63.3			
WG522934LCSSD	LCSSD	07/13/21 20:36	PCN63584	53.9		44.69424	mg/Kg		44.5	63.3	1	20	
L66693-15MS	MS	07/13/21 21:15	MS210521-6	25	2.77	24.5104	mg/Kg	87	75	125			
L66693-15MSD	MSD	07/13/21 21:17	MS210521-6	25	2.77	24.42968	mg/Kg	87	75	125	0	20	

pH, Saturated Paste

EPA 600/2-78-054 section 3.2.2

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523351													
WG523351ICV	ICV	07/15/21 16:24	PCN63115	4.01		4	units	100	3.9	4.1			
L66693-01DUP	DUP	07/15/21 16:48			7.9	7.99	units				1	20	

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Selenium (1312)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.05008	mg/L	100	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0003	0.0003			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0003	0.0003			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05		.04828	mg/L	97	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05	.00026	.04882	mg/L	97	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05	.00026	.04904	mg/L	98	75	125	0	20	
L66693-11DUP	DUP	07/09/21 16:50			.00011	.00011	mg/L				0	20	RA
WG523021													
WG523021ICV	ICV	07/12/21 20:00	MS210630-2	.05		.05021	mg/L	100	90	110			
WG523021ICB	ICB	07/12/21 20:01				.0001	mg/L		-0.0003	0.0003			
WG522653PBS	PBS	07/12/21 20:11				U	mg/L		-0.0003	0.0003			
WG522653LFB2	LFB	07/12/21 20:13	MS210702-2	.05		.05162	mg/L	103	80	120			
L66691-12MS	MS	07/12/21 20:18	MS210702-2	.05	U	.05144	mg/L	103	75	125			
L66691-12MSD	MSD	07/12/21 20:20	MS210702-2	.05	U	.05247	mg/L	105	75	125	2	20	
L66691-14DUP	DUP	07/12/21 20:29			.00011	U	mg/L				200	20	RA
WG523066													
WG523066ICV	ICV	07/13/21 14:56	MS210630-2	.05		.05078	mg/L	102	90	110			
WG523066ICB	ICB	07/13/21 14:58				.00012	mg/L		-0.0003	0.0003			
WG522746PBS	PBS	07/13/21 15:09				U	mg/L		-0.0003	0.0003			
WG522746LFB2	LFB	07/13/21 15:11	MS210702-2	.05		.0498	mg/L	100	80	120			
L66693-04DUP	DUP	07/13/21 15:14			.00011	U	mg/L				200	20	RA
L66731-09MS	MS	07/13/21 15:20	MS210702-2	.05	.0002	.05042	mg/L	100	75	125			
L66731-09MSD	MSD	07/13/21 15:25	MS210702-2	.05	.0002	.04997	mg/L	100	75	125	1	20	
WG523214													
WG523214ICV	ICV	07/14/21 14:10	MS210630-2	.05		.04927	mg/L	99	90	110			
WG523214ICB	ICB	07/14/21 14:12				.00014	mg/L		-0.0003	0.0003			
WG522409PBS	PBS	07/14/21 14:24				U	mg/L		-0.0003	0.0003			
WG522409LFB2	LFB	07/14/21 14:26	MS210702-2	.05		.04917	mg/L	98	80	120			
L66692-11DUP	DUP	07/14/21 14:30			.00017	.00015	mg/L				13	20	RA
L66692-13MS	MS	07/14/21 14:35	MS210702-2	.05	.00014	.05072	mg/L	101	75	125			
L66692-13MSD	MSD	07/14/21 14:37	MS210702-2	.05	.00014	.05022	mg/L	100	75	125	1	20	
WG523321													
WG523321ICV	ICV	07/15/21 15:18	MS210630-2	.05		.05141	mg/L	103	90	110			
WG523321ICB	ICB	07/15/21 15:20				U	mg/L		-0.0003	0.0003			
WG522974PBS	PBS	07/15/21 15:29				U	mg/L		-0.0003	0.0003			
WG522974LFB2	LFB	07/15/21 15:31	MS210702-2	.05		.04845	mg/L	97	80	120			
L66693-02MS	MS	07/15/21 15:36	MS210702-2	.05	U	.04899	mg/L	98	75	125			
L66693-02MSD	MSD	07/15/21 15:38	MS210702-2	.05	U	.04907	mg/L	98	75	125	0	20	
L66732-17DUP	DUP	07/15/21 16:13			U	U	mg/L				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Selenium, total (3050)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523108													
WG523108ICV	ICV	07/13/21 20:21	MS210630-2	.05		.04992	mg/L	100	90	110			
WG523108ICB	ICB	07/13/21 20:23				U	mg/L		-0.0003	0.0003			
WG522934PBS	PBS	07/13/21 20:32				.07096	mg/Kg		-0.15	0.15			
WG522934LCSS	LCSS	07/13/21 20:34	PCN63584	167		142.99479	mg/Kg		132	201			
WG522934LCSSD	LCSSD	07/13/21 20:36	PCN63584	167		147.72302	mg/Kg		132	201	3	20	
L66693-15MS	MS	07/13/21 21:15	MS210521-6	12.5	.131	11.51139	mg/Kg	91	75	125			
L66693-15MSD	MSD	07/13/21 21:17	MS210521-6	12.5	.131	11.53608	mg/Kg	91	75	125	0	20	

Solids, Percent

D2216-80

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG521938													
WG521938PBS	PBS	06/25/21 11:30				U	%		-0.1	0.1			
L66693-01DUP	DUP	06/25/21 13:56			99.9	99.8	%				0	20	

Sulfur, total

ASTM D-4239-85C, LECO Furnace

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522174													
WG522174PBS	PBS	07/06/21 8:30				U	%		-0.03	0.03			
WG522174LCSS	LCSS	07/06/21 8:34	PCN61786	4.01		3.65	%	91	80	120			
L66693-01MS	MS	07/06/21 8:42	PCN62544	1.3	U	1.21	%	93	80	120			
L66693-01DUP	DUP	07/06/21 8:46			U	U	%				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Thallium (1312)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522854													
WG522854ICV	ICV	07/09/21 16:10	MS210630-2	.05		.05177	mg/L	104	90	110			
WG522854ICB	ICB	07/09/21 16:12				U	mg/L		-0.0003	0.0003			
WG522394PBS	PBS	07/09/21 16:21				U	mg/L		-0.0003	0.0003			
WG522394LFB2	LFB	07/09/21 16:23	MS210702-2	.05		.04758	mg/L	95	80	120			
L66692-05MS	MS	07/09/21 16:28	MS210702-2	.05	U	.0475	mg/L	95	75	125			
L66692-05MSD	MSD	07/09/21 16:30	MS210702-2	.05	U	.04778	mg/L	96	75	125	1	20	
L66693-11DUP	DUP	07/09/21 16:50			U	U	mg/L				0	20	RA
WG523030													
WG523030ICV	ICV	07/12/21 17:32	MS210630-2	.05		.05062	mg/L	101	90	110			
WG523030ICB	ICB	07/12/21 17:33				U	mg/L		-0.0003	0.0003			
WG522409PBS	PBS	07/12/21 17:44				U	mg/L		-0.0003	0.0003			
WG522409LFB2	LFB	07/12/21 17:46	MS210702-2	.05		.04734	mg/L	95	80	120			
L66692-11DUP	DUP	07/12/21 17:50			U	U	mg/L				0	20	RA
L66692-13MS	MS	07/12/21 17:55	MS210702-2	.05	U	.0487	mg/L	97	75	125			
L66692-13MSD	MSD	07/12/21 17:57	MS210702-2	.05	U	.04784	mg/L	96	75	125	2	20	
WG523021													
WG523021ICV	ICV	07/12/21 20:00	MS210630-2	.05		.05143	mg/L	103	90	110			
WG523021ICB	ICB	07/12/21 20:01				U	mg/L		-0.0003	0.0003			
WG522653PBS	PBS	07/12/21 20:11				U	mg/L		-0.0003	0.0003			
WG522653LFB2	LFB	07/12/21 20:13	MS210702-2	.05		.05016	mg/L	100	80	120			
L66691-12MS	MS	07/12/21 20:18	MS210702-2	.05	U	.05021	mg/L	100	75	125			
L66691-12MSD	MSD	07/12/21 20:20	MS210702-2	.05	U	.05098	mg/L	102	75	125	2	20	
L66691-14DUP	DUP	07/12/21 20:29			U	U	mg/L				0	20	RA
WG523066													
WG523066ICV	ICV	07/13/21 14:56	MS210630-2	.05		.05152	mg/L	103	90	110			
WG523066ICB	ICB	07/13/21 14:58				U	mg/L		-0.0003	0.0003			
WG522746PBS	PBS	07/13/21 15:09				U	mg/L		-0.0003	0.0003			
WG522746LFB2	LFB	07/13/21 15:11	MS210702-2	.05		.04804	mg/L	96	80	120			
L66693-04DUP	DUP	07/13/21 15:14			U	U	mg/L				0	20	RA
L66731-09MS	MS	07/13/21 15:20	MS210702-2	.05	U	.04828	mg/L	97	75	125			
L66731-09MSD	MSD	07/13/21 15:25	MS210702-2	.05	U	.04821	mg/L	96	75	125	0	20	
WG523321													
WG523321ICV	ICV	07/15/21 15:18	MS210630-2	.05		.05225	mg/L	105	90	110			
WG523321ICB	ICB	07/15/21 15:20				U	mg/L		-0.0003	0.0003			
WG522974PBS	PBS	07/15/21 15:29				U	mg/L		-0.0003	0.0003			
WG522974LFB2	LFB	07/15/21 15:31	MS210702-2	.05		.0469	mg/L	94	80	120			
L66693-02MS	MS	07/15/21 15:36	MS210702-2	.05	U	.0479	mg/L	96	75	125			
L66693-02MSD	MSD	07/15/21 15:38	MS210702-2	.05	U	.04753	mg/L	95	75	125	1	20	
L66732-17DUP	DUP	07/15/21 16:13			U	U	mg/L				0	20	RA

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Thallium, total (3050)

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523108													
WG523108ICV	ICV	07/13/21 20:21	MS210630-2	.05		.0509	mg/L	102	90	110			
WG523108ICB	ICB	07/13/21 20:23				U	mg/L		-0.0003	0.0003			
WG522934PBS	PBS	07/13/21 20:32				U	mg/Kg		-0.15	0.15			
WG522934LCSS	LCSS	07/13/21 20:34	PCN63584	112		92.85277	mg/Kg		90.3	133			
WG522934LCSSD	LCSSD	07/13/21 20:36	PCN63584	112		96.3579	mg/Kg		90.3	133	4	20	
L66693-15MS	MS	07/13/21 21:15	MS210521-6	25	U	24.04038	mg/Kg	96	75	125			
L66693-15MSD	MSD	07/13/21 21:17	MS210521-6	25	U	23.91238	mg/Kg	96	75	125	1	20	

Hudbay Minerals

ACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Zinc (1312)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522656													
WG522656ICV	ICV	07/07/21 22:30	II210620-2	2		1.986	mg/L	99	90	110			
WG522656ICB	ICB	07/07/21 22:33				U	mg/L		-0.06	0.06			
WG522394PBS	PBS	07/07/21 22:58				U	mg/L		-0.06	0.06			
WG522394LFB1	LFB	07/07/21 23:02	II210622-2	.50075		.51	mg/L	102	80	120			
L66692-04MS	MS	07/07/21 23:09	II210622-2	.50075	U	.508	mg/L	101	75	125			
L66692-04MSD	MSD	07/07/21 23:13	II210622-2	.50075	U	.503	mg/L	100	75	125	1	20	
L66693-11DUP	DUP	07/08/21 0:00			U	U	mg/L				0	20	RA
WG522988													
WG522988ICV	ICV	07/12/21 17:57	II210712-1	2		1.958	mg/L	98	90	110			
WG522988ICB	ICB	07/12/21 18:01				U	mg/L		-0.06	0.06			
WG522409PBS	PBS	07/12/21 18:24				U	mg/L		-0.06	0.06			
WG522409LFB1	LFB	07/12/21 18:28	II210622-2	.50075		.486	mg/L	97	80	120			
L66692-11DUP	DUP	07/12/21 18:36			U	U	mg/L				0	20	RA
L66692-12MS	MS	07/12/21 18:43	II210622-2	.50075	U	.486	mg/L	97	75	125			
L66692-12MSD	MSD	07/12/21 18:47	II210622-2	.50075	U	.487	mg/L	97	75	125	0	20	
WG523072													
WG523072ICV	ICV	07/13/21 10:56	II210712-1	2		1.926	mg/L	96	90	110			
WG523072ICB	ICB	07/13/21 11:00				U	mg/L		-0.06	0.06			
WG522653PBS	PBS	07/13/21 11:24				.156	mg/L		-0.06	0.06			BF
WG522653LFB1	LFB	07/13/21 11:28	II210708-3	.50045		.564	mg/L	113	80	120			
L66691-11MS	MS	07/13/21 11:36	II210708-3	.50045	U	.508	mg/L	102	75	125			
L66691-11MSD	MSD	07/13/21 11:40	II210708-3	.50045	U	.509	mg/L	102	75	125	0	20	
L66691-14DUP	DUP	07/13/21 11:55			U	U	mg/L				0	20	RA
WG523103													
WG523103ICV	ICV	07/13/21 21:33	II210712-1	2		1.907	mg/L	95	90	110			
WG523103ICB	ICB	07/13/21 21:36				U	mg/L		-0.06	0.06			
WG522746PBS	PBS	07/13/21 22:00				U	mg/L		-0.06	0.06			
WG522746LFB1	LFB	07/13/21 22:04	II210708-3	.50045		.508	mg/L	102	80	120			
L66693-04DUP	DUP	07/13/21 22:11			U	U	mg/L				0	20	RA
L66693-05MS	MS	07/13/21 22:19	II210708-3	.50045	U	.503	mg/L	101	75	125			
L66693-05MSD	MSD	07/13/21 22:22	II210708-3	.50045	U	.512	mg/L	102	75	125	2	20	
WG523284													
WG523284ICV	ICV	07/15/21 11:04	II210712-1	2		1.963	mg/L	98	90	110			
WG523284ICB	ICB	07/15/21 11:08				U	mg/L		-0.06	0.06			
WG522974PBS	PBS	07/15/21 11:32				U	mg/L		-0.06	0.06			
WG522974LFB1	LFB	07/15/21 11:36	II210708-3	.50045		.514	mg/L	103	80	120			
L66693-01MS	MS	07/15/21 11:44	II210708-3	.50045	U	.507	mg/L	101	75	125			
L66693-01MSD	MSD	07/15/21 11:48	II210708-3	.50045	U	.5	mg/L	100	75	125	1	20	
L66732-17DUP	DUP	07/15/21 13:06			U	U	mg/L				0	20	RA

Hudbay MineralsACZ Project ID: **L66693**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Zinc, total (3050)

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523115													
WG523115ICV	ICV	07/13/21 23:22	II210712-1	2		1.933	mg/L	97	90	110			
WG523115ICB	ICB	07/13/21 23:26				U	mg/L		-0.06	0.06			
WG522934PBS	PBS	07/13/21 23:50				U	mg/Kg		-6	6			
WG522934LCSS	LCSS	07/13/21 23:53	PCN63584	158		132.1	mg/Kg		128	188			
WG522934LCSSD	LCSSD	07/13/21 23:57	PCN63584	158		136.8	mg/Kg		128	188	3	20	
L66693-01MS	MS	07/14/21 0:04	II210708-3	50.045	10.8	59.73	mg/Kg	98	75	125			
L66693-01MSD	MSD	07/14/21 0:08	II210708-3	50.045	10.8	58.8	mg/Kg	96	75	125	2	20	

Hudbay Minerals

ACZ Project ID: **L66693**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-01	WG523320	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523321	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523321	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523321	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523284	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523321	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.

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	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523284	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523165	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG523284	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523321	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523321	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523284	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-02	WG523320	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523321	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523321	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523321	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523284	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523321	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523284	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523165	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG523284	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523321	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523321	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523284	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-03	WG523320	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523321	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523321	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523321	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523284	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523321	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523284	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523165	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG523284	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523321	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523321	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523284	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-04	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523066	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523066	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523066	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523066	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523103	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523066	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523103	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523163	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG523103	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523066	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523066	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523103	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-05	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523066	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523066	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523066	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523066	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523103	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523066	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523103	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523163	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG523103	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523066	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523066	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523103	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-06	WG523072	Aluminum (1312)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523021	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523021	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523072	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Lead (1312)	M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523072	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523162	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG523072	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523021	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523021	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523072	Zinc (1312)	M6010D ICP	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-07	WG523072	Aluminum (1312)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523021	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523021	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523072	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Lead (1312)	M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523072	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523162	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG523072	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523021	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523021	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523072	Zinc (1312)	M6010D ICP	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-08	WG523072	Aluminum (1312)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523021	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523021	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523072	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Lead (1312)	M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523072	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523162	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG523072	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523021	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523021	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523072	Zinc (1312)	M6010D ICP	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-09	WG523072	Aluminum (1312)	M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523021	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523021	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523072	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523021	Lead (1312)	M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523072	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523162	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG523072	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523021	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523021	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523072	Zinc (1312)	M6010D ICP	BF	Target analyte in prep / method blank at or above the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-10	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522854	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523161	Mercury (1312)	M7470A CVAA M7470A CVAA	Q6 RA	Sample was received above recommended temperature. Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS M7473 CVAAS	Q6 RA	Sample was received above recommended temperature. Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-11	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522854	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523161	Mercury (1312)	M7470A CVAA M7470A CVAA	Q6 RA	Sample was received above recommended temperature. Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS M7473 CVAAS	Q6 RA	Sample was received above recommended temperature. Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ Project ID: **L66693**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-12	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522854	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523161	Mercury (1312)	M7470A CVAA M7470A CVAA	Q6 RA	Sample was received above recommended temperature. Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS M7473 CVAAS	Q6 RA	Sample was received above recommended temperature. Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-13	WG522656	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522854	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG522854	Copper (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522656	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG522854	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522656	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523161	Mercury (1312)	M7470A CVAA M7470A CVAA	Q6 RA	Sample was received above recommended temperature. Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS M7473 CVAAS	Q6 RA	Sample was received above recommended temperature. Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522854	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522656	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-14	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523030	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523162	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-15	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523030	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523162	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-16	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523030	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523162	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ Project ID: **L66693**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-17	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523030	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.

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ACZ Project ID: **L66693**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523162	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ Project ID: **L66693**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-18	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523030	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523162	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522547	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

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ACZ Project ID: **L66693**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66693-19	WG522988	Aluminum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Aluminum, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Antimony (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Antimony, total (3050)	M6020B ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Arsenic (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Arsenic, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG523030	Cadmium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522173	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG523030	Copper (1312)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523108	Copper, total (3050)	M6020B ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6020B ICP-MS	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
			M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG522988	Iron (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG523183	Iron, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523030	Lead (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523108	Lead, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.

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ACZ Project ID: **L66693**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG522988	Magnesium (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M6010D ICP	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Manganese (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523115	Manganese, total (3050)	M6010D ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG523162	Mercury (1312)	M7470A CVAA	Q6	Sample was received above recommended temperature.
			M7470A CVAA	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522321	Mercury by Direct Combustion AA	M7473 CVAAS	Q6	Sample was received above recommended temperature.
			M7473 CVAAS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Molybdenum (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Nickel (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523214	Selenium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522174	Sulfur, total	ASTM D-4239-85C, LECO Furnace	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG523030	Thallium (1312)	M6020B ICP-MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG522988	Zinc (1312)	M6010D ICP	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Hudbay Minerals

ACZ Project ID: **L66693**

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Selenium (1312)	M6020B ICP-MS
Selenium, total (3050)	M6020B ICP-MS

Soil Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
Conductivity @25C	SM2510B
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2
Solids, Percent	D2216-80
Sulfur, total	ASTM D-4239-85C, LECO Furnace

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
Conductivity @25C	SM2510B
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2
Solids, Percent	D2216-80
Sulfur, total	ASTM D-4239-85C, LECO Furnace

Hudbay Minerals

ACZ Project ID: L66693

Date Received: 06/23/2021 15:35

Received By:

Date Printed: 6/24/2021

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? ¹	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA35315	22.6	NA	15	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Hudbay Minerals

ACZ Project ID: L66693

Date Received: 06/23/2021 15:35

Received By:

Date Printed: 6/24/2021

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



Laboratories, Inc. 466693

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Holly Beggy
Company: Hudbay Minerals
E-mail: holly.beggy@hudsonminerals.com

Address: 5255 E. Williams Circle, Suite 1065
Telephone: 520-343-5174

Copy of Report to:

Name: David Krizek
Company: david.krizek@hudsonminerals.com

E-mail: 5255 E. Williams Circle, Suite 1065
Telephone: 520-495-3527

Invoice to:

Name: Lionelyn Garcia
Company: Hudbay Minerals
E-mail: rosemontinvoices@hudsonminerals.com

Address: 5255 E. Williams Circle, Suite 1065
Telephone: 520-495-3545

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES ☒
NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring?

Yes ☐ No ☒

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Cory Archer Sampler's Site Information State AZ Zip code 85629 Time Zone AZ

*Sampler's Signature: [Signature]

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: 2021-SOILS

PO#:

Reporting state for compliance testing: No

Check box if samples include NRC licensed material? ☐

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Drainage-1 (Under Plant)	Drainage 1-2-3-4	Ina Road WWTP-Soil	Plant Tissue						
SR-1	6/17/21, 5:40	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SR-2	6/17/21, 6:56	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SR-3	6/17/21, 5:40	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WR-1	6/14/21, 12:13	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WR-2	6/14/21, 12:43	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-9	6/10/21, 6:14	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-13	6/10/21, 7:02	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-16	6/10/21, 8:35	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-17	6/10/21, 7:49	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-19	6/10/21, 10:44	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Samples have been sieved to 4mm with a #5 sieve.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Cory Archer	6/18/21 10:49	Holly Beggy	6/18/21, 10:48
Holly Beggy	6/21, 2:10pm		

FRMAD050.06.14.14

White - Return with sample. Yellow - Retain for your records.





L66693
Laboratories, Inc.

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Holly Beggy
Company: Hudbay Minerals
E-mail: holly.beggy@hudsonminerals.com

Address: 5255 E. Williams Circle, Suite 1065
Telephone: 520-343-5174

Copy of Report to:

Name: David Krizek
Company: david.krizek@hudsonminerals.com

E-mail: 5255 E. Williams Circle, Suite 1065
Telephone: 520-495-3527

Invoice to:

Name: Lionelyn Garcia
Company: Hudbay Minerals
E-mail: rosemontinvoices@hudsonminerals.com

Address: 5255 E. Williams Circle, Suite 1065
Telephone: 520-495-3545

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES ☒
NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring?

Yes ☐

No ☒

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Corey Archer Sampler's Site Information State AZ Zip code 85629 Time Zone AZ

*Sampler's Signature:

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: 2021-SOILS

PO#:

Reporting state for compliance testing: No

Check box if samples include NRC licensed material? ☐

SAMPLE IDENTIFICATION			DATE:TIME	Matrix	# of Containers	Drainage-1 (Under Plant)	Drainage 1-2-3-4	Ina Road WWTP-Soil	Plant Tissue						
D3-1	6/7/21 : 11:29am	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D3-2	6/7/21 : 10:01am	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D3-3	6/7/21 : 10:45am	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D3-4A	6/7/21 : 11:08am	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D3-4B	6/8/21 : 7:24am	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D3-5A	6/8/21 : 7:51am	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D3-5B	6/8/21 : 10:09am	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D3-6	6/8/21 : 11:05am	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D3-7	6/8/21 : 11:31am	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D3-8	6/8/21 : 12:40pm	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Samples have been sieved to 4mm with a #5 sieve.

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Corey Archer	6/9/21 : 3:05	Holly Beggy	6/9/21 : 3:05
Holly Beggy	6/21/21, 2:10pm		6/23/21, 15:35

FRMAD050.06.14.14

White - Return with sample. Yellow - Retain for your records.

Holly Beggy
Hudbay Minerals
5255 E Williams Circle Suite W1065
Tucson, AZ 85711

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Quote Number: DRAINAGE-2-3-4

Matrix: Soil

Drainages 2, 3 & 4: 96 samples: SPLP, TIC, TS, 3050 Metals, Paste PH & EC

Parameter	Method	Detection Limit	Cost/Sample
Diskette/QC Summary			
Quality Control Summary			\$0.00
Inorganic Prep			
Total Hot Plate Digestion	M3010A ICP		\$0.00
Total Hot Plate Digestion	M3010A ICP-MS		\$0.00
Metals Analysis			
Aluminum (1312)	M6010D ICP	0.05 mg/L	\$7.50
Aluminum, total (3050)	M6010D ICP	5 mg/Kg	\$7.50
Antimony (1312)	M6020B ICP-MS	0.0004 mg/L	\$12.00
Antimony, total (3050)	M6020B ICP-MS	0.2 mg/Kg	\$12.00
Arsenic (1312)	M6020B ICP-MS	0.0002 mg/L	\$12.00
Arsenic, total (3050)	M6020B ICP-MS	0.1 mg/Kg	\$12.00
Cadmium (1312)	M6020B ICP-MS	0.00005 mg/L	\$12.00
Cadmium, total (3050)	M6020B ICP-MS	0.025 mg/Kg	\$12.00
Calcium (1312)	M6010D ICP	0.1 mg/L	\$7.50
Calcium, total (3050)	M6010D ICP	10 mg/Kg	\$7.50
Copper (1312)	M6020B ICP-MS	0.0008 mg/L	\$12.00
Copper, total (3050)	M6020B ICP-MS	0.4 mg/Kg	\$12.00
Iron (1312)	M6010D ICP	0.06 mg/L	\$7.50
Iron, total (3050)	M6010D ICP	6 mg/Kg	\$7.50
Lead (1312)	M6020B ICP-MS	0.0001 mg/L	\$12.00
Lead, total (3050)	M6020B ICP-MS	0.05 mg/Kg	\$12.00
Magnesium (1312)	M6010D ICP	0.2 mg/L	\$7.50
Magnesium, total (3050)	M6010D ICP	20 mg/Kg	\$7.50
Manganese (1312)	M6010D ICP	0.01 mg/L	\$7.50
Manganese, total (3050)	M6010D ICP	1 mg/Kg	\$7.50
Mercury (1312)	M7470A CVAA	0.0002 mg/L	\$20.00
Mercury by Direct Combustion AA	M7473 CVAAS	2 ng/g	\$19.50
Molybdenum (1312)	M6010D ICP	0.02 mg/L	\$7.50
Molybdenum, total (3050)	M6010D ICP	2 mg/Kg	\$7.50
Nickel (1312)	M6020B ICP-MS	0.0004 mg/L	\$12.00
Nickel, total (3050)	M6020B ICP-MS	0.2 mg/Kg	\$12.00
Selenium (1312)	M6020B ICP-MS	0.0001 mg/L	\$12.00
Selenium, total (3050)	M6020B ICP-MS	0.05 mg/Kg	\$12.00
Thallium (1312)	M6020B ICP-MS	0.0001 mg/L	\$12.00

REPAD.09.06.05.01

S/ tjv D/ 21 P/

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Quote

Holly Beggy
Hudbay Minerals
5255 E Williams Circle Suite W1065
Tucson, AZ 85711

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Thallium, total (3050)	M6020B ICP-MS		
Zinc (1312)	M6010D ICP	0.05 mg/Kg	\$12.00
Zinc, total (3050)	M6010D ICP	0.02 mg/L	\$7.50
Misc.		2 mg/Kg	\$7.50
Electronic Data Deliverable			\$0.00
Sample Preparation			
Air Dry at 34 Degrees C	USDA No. 1, 1972		\$6.25
Digestion - Hot Plate	M3050B ICP		\$12.75
Digestion - Hot Plate	M3050B ICP-MS		\$0.00
Saturated Paste Extraction	USDA No. 60 (2)		\$13.00
Sieve-2000 um (2.0mm)	ASA No.9, 15-4.2.2		\$9.25
Synthetic Precip. Leaching Procedure	M1312		\$58.00
Soil Analysis			
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	0.1 %	\$14.00
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	0.1 %	\$0.00
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	0.1 %	\$22.00
Conductivity @25C	SM2510B	0.001 mmhos/cm	\$6.25
pH, Saturated Paste	EPA 600/2-78-054 section 3.2.2	0.1 units	\$6.25
Solids, Percent	D2216-80	0.1 %	\$6.25
Sulfur, total	ASTM D-4239-85C, LECO Furnace	0.01 %	\$14.00
Cost/Sample:			\$504.50

This quote is based on a Standard Turn Around Time of approximately 21 days for soil and solid matrices (15 business days). TAT may vary with seasonal heavy workload. Please contact your PM if rush TAT is required. Rush TAT needs to be pre-approved prior to sample shipment to assure that due dates can be met. Pricing includes standard reporting formats and standard ACZ EDDs. All projects received are subject to a \$150.00 Minimum Charge. Please note that method detection limits are estimates and may be elevated depending on sample matrix that require dilution. Pricing includes coolers, soil jars or bags, labels, COCs and ice-packs (if needed for your analysis), shipped to your site or office via UPS ground. Return shipping is the responsibility of the client. Please allow ample time for your bottles to arrive. Please note that soil preparation charges may change based on the condition and volume of sample(s) upon receipt. Wet samples may increase the TAT if air-drying is needed required.

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